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ENVIRONMENTAL ASSESSMENT BOARD

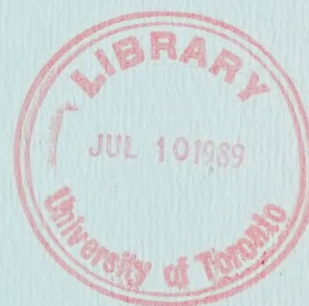
VOLUME: 118

DATE: Monday, June 26th, 1989

BEFORE: M.I. JEFFERY, Q.C., Chairman

E. MARTEL, Member

A. KOVEN, Member



FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council
(O.C. 2449/87) authorizing the
Environmental Assessment Board to
administer a funding program, in
connection with the environmental
assessment hearing with respect to the
Timber Management Class
Environmental Assessment, and to
distribute funds to qualified
participants.

Hearing held at the Ramada Prince Arthur
Hotel, 17 North Cumberland St., Thunder
Bay, Ontario, on Monday, June 26th,
1989, commencing at 1:00 p.m.

VOLUME 118

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member

A P P E A R A N C E S

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MR. R. LINDGREN)	
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MS. L. NICHOLLS)	LIMITED and SPRUCE FALLS
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APPEARANCES: (Cont'd)

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TOURISM ASSOCIATION

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683	Document entitled: Environmental Guidelines for Access Roads and Water Crossings.	19723
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685	Document entitled: Resource Access Roads Policy and Implementation Strategies and Guidelines.	19724
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699	Log Bridge Construction Handbook, 1980 by FERIC.	19827

1 ---Upon commencing at 1:10 p.m.

2 THE CHAIRMAN: Thank you. Please be
3 seated.

4 MS. BLASTORAH: Mr. Chairman, I would
5 like to start by filing a number of exhibits. We have
6 just continued on from the exhibit number that was left
7 at the end of the last panel, and I have already taken
8 the liberty of marking the exhibit numbers on the
9 copies we are going to be filing.

10 I believe we left off at Exhibit 681, so
11 the next exhibit will be 682.

12 THE CHAIRMAN: Very well.

13 MS. BLASTORAH: First is the statement of
14 evidence for Panel 14, Exhibit 682.

15 ---EXHIBIT NO. 682: Panel 14 Statement of Evidence.

16 MS. BLASTORAH: And I propose to mark a
17 letter dated March 30th, 1989 from Kathleen Murphy to
18 the parties containing corrections to the statement of
19 evidence as Exhibit 682A. And this letter went out to
20 all the parties on the date of it, is my -- on its
21 date.

22 THE CHAIRMAN: Okay.

23 ---EXHIBIT NO. 682A: Letter dated March 30, 1989 from
24 Kathleen Murphy re: corrections
25 to the statement of evidence of
Panel 14.

1 MS. BLASTORAH: The next exhibit, No.
2 683, will be the Environmental Guidelines for Access
3 Roads and Water Crossings, which is reference No. 2 to
4 Mr. Adamson's paper, the second -- Document No. 2 in
5 the statement of evidence.

6 I have copies of that for the exhibit as
7 well as copies for the Board.

8 THE CHAIRMAN: Okay.

9 ---EXHIBIT NO. 683: Document entitled: Environmental
10 Guidelines for Access Roads and
Water Crossings.

11 MS. BLASTORAH: Exhibit 684 will be
12 Guidelines and Criteria for Approvals under the Lakes
13 and Rivers Improvement Act. This is reference No. 3 in
14 Document No. 2 of the statement of evidence, and I only
15 have one copy to file as an exhibit today.

16 It is not something that we will be
17 referring to extensively, but we are having other
18 copies made for the Board should they be necessary for
19 cross-examination.

20 ---EXHIBIT NO. 684: Guidelines and Criteria for
21 Approvals under the Lakes and
Rivers Improvement Act.

22 MS. BLASTORAH: Exhibit 685 will be
23 Resource Access Roads Policy and Implementation
24 Strategies and Guidelines.

25 Again, we only had one copy of this

1 document which has been available in the reading room.
2 It is a fairly large binder. We will have additional
3 copies made for the Board prior to cross-examination.

4 And I have spoken to Mr. Mander, we
5 propose to mark this one for the time being.

6 ---EXHIBIT NO. 685: Document entitled: Resource
7 Access Roads Policy and
8 Implementation Strategies and
9 Guidelines.

10 MS. BLASTORAH: Exhibit 686 will be the
11 Final Report, Crown Land Bridge Management dated March,
12 1989. This was a document sent out in response to some
13 of the interrogatories. I do have copies for the Board
14 and a copy for the exhibit. I am not sure I have any
15 extra copies here today, but we have already provided
16 copies to the Ministry of the Environment and the
17 Industry associations.

18 ---EXHIBIT NO. 686: Document entitled: Final Report,
19 Crown Land Bridge Management dated
20 March, 1989.

21 MS. BLASTORAH: Exhibit 687 will be the
22 Sand and Gravel Pit -- a document entitled: Sand and
23 Gravel Pit Rehabilitation in Northern Ontario. That's
24 reference No. 4 to Document No. 2 in the statement of
25 evidence.

26 ---EXHIBIT NO. 687: Document entitled: Sand and
27 Gravel Pit Rehabilitation in
28 Northern Ontario.

1
2 MS. BLASTORAH: And lastly is a package
3 of interrogatories. We propose to file these all as
4 one package rather than individually throughout the
5 evidence-in-chief. And I will perhaps just read out
6 the ones that we are filing, if that's agreeable, and
7 that would be Exhibit 688.

8 The interrogatories being filed are
9 Ministry of the Environment Nos. 1, 2, 3, 7, 8, 10, 12,
10 14, 15, 20, 21, 22, 23 and 25; OFIA/OLMA Nos. 6, 7 and
11 11; Nishnawbe-Aski Nation and Windigo Tribal Council
12 Nos. 3, 6, 7, 8, 9 and 13; and NOTOA Interrogatory Nos.
13 3, 6, 7, 8, 11, 12, 13-20, 22-24, 26, 28-38.

14 MR. TUER: 28 to 38?

15 MS. BLASTORAH: Yes, that's right. 40,
16 42 and 43.

17 And we have taken the liberty of making
18 copies of all of -- that entire package for all of the
19 parties to avoid having them have to sort through their
20 own copies. So perhaps we can distribute all of that
21 material now.

22 THE CHAIRMAN: Okay. Please distribute
23 what you have now and bring up the Board copies, if you
24 have any for the Board at this time.

25 MS. BLASTORAH: (handed)

1 ---EXHIBIT NO. 688: MOE Interrogatory Question Nos.
2 1-3, 7, 8, 10-12, 14, 15, 20-23
3 and 25; OFIA/OLMA Nos. 6, 7 and
4 11; NAN and Windigo Tribal Council
 Nos. 3, 6-9 and 13; NOTOA Nos. 3,
 6-8, 11-20, 22-24, 26, 28-38, 40,
 42, 43.

5 MS. BLASTORAH: Mr. Chairman, I seem to
6 have brought a copy of the Bridge Management Report
7 back to the table with me.

8 Do you have four copies? It is Exhibit
9 686 which looks like this. (indicating)

10 THE CHAIRMAN: Well, we have three of
11 them anyway.

12 MS. BLASTORAH: I guess it was a spare.

13 THE CHAIRMAN: Yes.

14 MS. BLASTORAH: The next item I think,
15 Mr. Chairman, is to swear the witnesses.

16 THE CHAIRMAN: I guess we only have to
17 swear two of them.

18 MS. BLASTORAH: Yes, Mr. Tenaglia and Mr.
19 Adamson. Would you like to qualify them first or swear
20 them first?

21 THE CHAIRMAN: Well, I suppose they are
22 going to be witnesses in some capacity; are they not?

23 MS. BLASTORAH: Yes.

24 THE CHAIRMAN: Okay. Why don't we swear
25 them first and then we will go through the

1 qualification.

2 MS. BLASTORAH: Okay.

3 THE CHAIRMAN: Would you two gentlemen
4 please step forward.

5 BRUCE ADAMSON,
6 SERGE TENAGLIA, Sworn
7 NEVILLE WARD,
8 GORDON PYZER,
9 DAVID M. HOGG, Recalled

10 THE CHAIRMAN: The rest of you gentlemen
11 who have been previously sworn remain sworn, it will
12 not be necessary to go through it again.

13 MS. BLASTORAH: Mr. Chairman, just to
14 review the qualifications of the witnesses who were
15 previously qualified.

16 Mr. Ward was previously qualified in
17 Panel 7 as a fisheries biologist with particular
18 expertise in fish habitat and fisheries management.

19 Mr. Hogg was previously qualified as a
20 wildlife biologist.

21 Mr. Pyzer was previously qualified as an
22 expert in resource management.

23 And I am asking that Mr. Tenaglia be
24 qualified as a practising forester with extensive
25 experience in boreal forestry and with knowledge of the
planning and operational aspects of access for timber
management purposes.

1 THE CHAIRMAN: Any parties have any
2 difficulty with those qualifications?

3 (no response)

4 Very well. This witness will be
5 qualified in those areas.

6 MS. BLASTORAH: Lastly, Mr. Adamson is a
7 civil engineer with extensive experience in the design,
8 construction and maintenance of access roads and water
9 crossings.

10 THE CHAIRMAN: Any objection to those
11 qualifications?

12 (no response)

13 Thank you. You will be so qualified in
14 those areas.

15 ---Discussion off the record

16 THE CHAIRMAN: Excuse me.

17 MS. BLASTORAH: The next thing I propose,
18 Mr. Chairman, is just indicate the order of
19 presentation of the evidence.

20 Mr. Tenaglia will be leading off,
21 followed by Mr. Adamson, then we will hear from Mr.
22 Ward and some further evidence from Mr. Adamson.

23 The purpose of doing that is Mr. Adamson
24 is first going to outline some of the -- he is going to
25 go through the Environmental Guidelines for Access

1 Roads and Water Crossings and some of the other issues
2 that were raised by the interrogatories.

3 Then Mr. Ward is going to give his
4 evidence with regard to effects on the aquatic
5 environment, and Mr. Adamson will then come back and
6 give some more evidence on mitigation techniques.

7 We felt that that was probably the most
8 helpful way to hear the evidence. Then that will be
9 followed by Mr. Hogg and Mr. Pyzer, in that order.

10 The next item Mr. Chairman, as we
11 indicated during the scoping session, we are going to
12 attempt to give the parties some indication of how this
13 evidence fits into the bigger picture in terms of the
14 evidence of other panels.

15 We have prepared this outline of the
16 access evidence and we have also had it blown up and
17 mounted, you will see on the large blowup document on
18 the display behind the witnesses. That is exactly the
19 same as what's on the overhead, and the reason we have
20 done that is so that that can stay up during the
21 evidence of the witnesses when they are using other
22 overheads. We hope that will be helpful.

23 THE CHAIRMAN: Okay. Can we mark that
24 one then?

25 MS. BLASTORAH: Yes.

1 THE CHAIRMAN: Exhibit 689.

2 MS. BLASTORAH: We have copies of that
3 for all of the parties as well with the colours
4 indicated as the blowup.

5 We have hard copies for the Board as
6 well. (handed)

7 THE CHAIRMAN: Thank you.

8 ---EXHIBIT NO. 689: Overhead prepared my MNR depicting
9 Panel 14 outline of evidence.

10 MS. BLASTORAH: I would like to briefly
11 go through this overhead and just indicate what we
12 intended to do with this overhead and how we hope it
13 will help the Board and the parties, and I will
14 indicate what the various colours represent.

15 I would like to begin by referring to the
16 first paragraph of the witness statement. I don't
17 think it is necessary to turn to that, but that
18 paragraph of the witness statement indicates that Panel
19 14 will be dealing with essentially four areas:

20 The purposes of providing access; the
21 pros and cons, if you will, of the alternative methods
22 of access; the potential environmental effects of
23 access; and actions to prevent, minimize, mitigate or
24 remedy those effects.

25 And that was -- when the evidence was

1 prepared and the panels were divided up that was what
2 this panel was intended to deal with. But perhaps I
3 could walk you through this overhead to indicate how we
4 see that fitting into some of the later panels.

5 The areas marked in blue on the overhead
6 and on the hard copies that have been handed out are
7 areas that will be covered by Panel 15 in some detail.

8 The areas marked in yellow are areas that
9 will be addressed by the witnesses in Panel 14, and in
10 some cases that evidence has been developed in the
11 preparation of this panel's oral evidence as a response
12 to the interrogatories and the statement of issues that
13 we received, but those matters will be dealt with in
14 some measure of detail by this panel.

15 The area marked in orange on the overhead
16 and in pink on the hard copies of the document is the
17 evidence of -- represents the evidence that will be
18 covered by Panel 16, the monitoring panel.

19 Now, in going through this I would like
20 to point out that the areas indicated in blue, which
21 will be dealt with by Panel 14, essentially are timber
22 management planning areas and we feel that those are
23 something that should be dealt with in detail by Panel
24 15, and this panel is not here to address those items,
25 per se.

1 However, because of the nature of the
2 interrogatories we received and, again, in the
3 statements of issue, it became clear to us the parties
4 needed some context in which to ask their questions of
5 this panel and it became clear to us that it was
6 difficult to draw any kind of a clear line, as we found
7 in the past, between the operational aspects that are
8 to be dealt with by this panel and the larger planning
9 picture.

10 So because of that situation we have
11 asked Mr. Tenaglia to briefly go through the areas
12 indicated in blue to help the Board and the parties see
13 the way that this panel's evidence fits into the timber
14 management planning process. He won't be dealing with
15 that in any detail, it is more to give some context to
16 what the panel will be talking about in more detail.

17 In closing, I just indicate that this
18 flow chart, or whatever you want to call it, overhead,
19 is intended as an aid, it is not definitive. We hope
20 it will be helpful to the Board and the parties and the
21 witnesses will certainly attempt to answer whatever
22 questions they can and we will attempt to indicate
23 where we feel things might be better addressed to a
24 later panel.

25 I think, unless there are preliminary

1 matters from the Board, I would like to begin with Mr.
2 Tenaglia.

3 DIRECT EXAMINATION BY MS. BLASTORAH:

4 Q. Mr. Tenaglia, you prepared document
5 No. 1 in the statement of evidence which is entitled:
6 Provision of Access for Timber Management?

7 MR. TENAGLIA: A. That's correct.

8 Q. Would you please outline for the
9 Board the principal messages you wish them to take from
10 your evidence?

11 A. Mr. Chairman, to date you have heard
12 of a number of timber management activities,
13 particularly harvest, renewal and maintenance. Access
14 is the last of the timber management activities and
15 which goes to make up the undertaking.

16 Q. Mr. Tenaglia, could you perhaps move
17 your microphone a little closer. I don't know whether
18 it is a problem with the microphone or just its
19 location.

20 A. There are three principal messages
21 which I would like to convey to the Board. Firstly,
22 the successful delivery of the first three activities
23 which I have mentioned are dependent on an effective
24 access system. This makes access an activity -- a
25 necessary activity in order to ensure that the purpose

1 of the undertaking is met.

2 I believe it is important to emphasize,
3 Mr. Chairman, that unless an access system is
4 reasonable and cost effective the other related timber
5 management activities may be constrained in being
6 undertaken.

7 The purpose of access is very simply to
8 transport personnel and equipment in order to carry out
9 the timber management activities of harvest, renewal
10 and maintenance. I should also add that an aspect of
11 harvest -- an aspect of harvest which is very dependent
12 on an effective access system is the transportation of
13 harvested wood to the wood processing facilities.

14 Secondly, as noted in the witness
15 statement, there are currently four alternative means
16 of access: Road, rail, water and air. It is essential
17 to maintain alternatives in the event that a particular
18 form of access is not a feasible option. The
19 identification of alternatives is part of the planning
20 process.

21 Road access certainly is by far the most
22 versatile form of access. Rail and water, in that
23 order, relative to the transportation of roundwood,
24 also plays a fairly important role.

25 Air travel is a more specific form of

1 access primarily used for monitoring purposes, for
2 forest protection, forest maintenance, as well as for
3 monitoring purposes. Air travel -- air access really
4 doesn't play a role, a direct role in forest extraction
5 in the area of the undertaking.

6 The third message is other values are
7 taken into account in the planning, construction and
8 use and maintenance of forest access.

9 Q. Would you indicate to the Board how
10 you intend to structure the evidence you will be giving
11 here today?

12 A. My oral evidence is going to speak to
13 a number of issues that have been raised through the
14 interrogatories and through the statements of issue.

15 Q. You mentioned in your opening remarks
16 that although roads are the principal or the most
17 versatile means of access, there are alternatives. How
18 significant are those alternatives?

19 A. Mr. Chairman, we have received a
20 number of interrogatories pertaining to the alternative
21 of water access and water for the use of transportation
22 of wood, in particular the Ministry of the Environment
23 Interrogatory No. 6 and No. 23. No. 6 wasn't filed
24 with the package.

25 I, therefore, would like to discuss the

1 alternatives -- the alternative method briefly. In
2 doing that I would like to present to the Board a
3 graphic representation of the figures contained in the
4 statement of evidence on page 56 and 57.

5 MS. BLASTORAH: Mr. Chairman, we have
6 hard copies of the overhead that Mr. Tenaglia is going
7 to be using.

8 THE CHAIRMAN: Okay. Exhibit 690.

9 MS. BLASTORAH: (handed)

10 THE CHAIRMAN: Thank you.

11 ---EXHIBIT NO. 690: Overhead entitled: Movement of
12 Roundwood from Crown Land by
Water.

13 MR. TENAGLIA: The figures that are
14 illustrated on the overhead represent the roundwood
15 that was -- that comes from the area of the undertaking
16 that has been moved by water from the period of '83 to
17 1987. As you can see from the overhead that percentage
18 has dropped from eight per cent to four per cent over
19 the past five years.

20 MS. BLASTORAH: Q. Just for the record,
21 Mr. Tenaglia, could you indicate by colour the areas
22 that you are referring to?

23 MR. TENAGLIA: A. The orange is the
24 figure for the percentage of the roundwood moved by
25 water. For comparison purposes, I am going to show --

1 the next graph will illustrate the amount of roundwood
2 moved by rail for the same period of time.

3 MS. BLASTORAH: Mr. Chairman, just for
4 the record, again, the hard copies that we have handed
5 out do not have colours on them; however, they are
6 indicated in another way.

7 On both of Exhibit 690 and 691 the areas
8 that are marked in hatch marks on the hard copies are
9 shown in green on the overhead, and the areas marked in
10 a solid block of colour on the hard copy are shown in
11 orange on the overhead.

12 THE CHAIRMAN: Okay. The next exhibit
13 will be Exhibit 691.

14 MS. BLASTORAH: And the title of that is:
15 Movement of Roundwood from Crown Land by Rail. Just
16 for the record, the previous was: Movement of
17 Roundwood from Crown Land by Water.

18 (handed)

19 THE CHAIRMAN: Thank you.

20 ---EXHIBIT NO. 691: Overhead entitled: Movement of
21 Roundwood from Crown Land by Rail.

22 MR. TENAGLIA: For both of these forms of
23 access the use in terms of round -- the forms of
24 access, the use in terms of roundwood movement is
25 small, but I believe it is important to maintain those

1 options as, in some cases, there is no other recourse.

2 It is important to emphasize that the use
3 of rail or water to perform timber management
4 activities, especially harvesting, is predicated on
5 road access. I would like to emphasize that all of the
6 wood harvested in the figures that are in pages 56 and
7 57, all of that wood was moved at one point in time or
8 another by road.

9 MS. BLASTORAH: Q. At page 290 of the
10 statement of evidence Mr. Ward indicates that the use
11 of water access is very limited and it is expected that
12 the trend toward use of water access being small -- or
13 that the trend in use of water access will continue.

14 He goes on to say that:

15 "A proposal for use of water access on
16 a previously unaffected waterway may
17 nevertheless be made."

18 Should a company wish to use a new
19 waterway for the purpose of transporting wood, is there
20 process in place which would require review of the
21 environmental impact of that proposal and which would
22 allow for public input?

23 MR. TENAGLIA: A. We were asked that
24 question through the Ministry of the Environment's
25 Interrogatory No. 23. We are proposing to revise the

1 timber management planning manual to address that
2 matter. I would like to direct your attention to the
3 first paragraph on the second page of the Ministry's
4 Interrogatory No. 23.

5 MS. BLASTORAH: That is at page 13 of
6 Exhibit 688, Mr. Chairman:

7 MR. TENAGLIA: That paragraph reads:

8 "In the consideration of proposals for
9 use of a new waterway to transport wood,
10 whether or not that occurs within the
11 context of the timber management plan,
12 relevant legislation would apply and the
13 Ministry of the Environment would be
14 involved. Such legislation includes the
15 Federal Fisheries Act, the Navigable
16 Waters Protection Act and the Provincial
17 Lakes and Rivers Improvement Act and the
18 Ontario Water Resources Act. The
19 potential effects of a new waterway
20 proposal would be considered under the
21 appropriate terms of such legislation.
22 As well, if the proposal proceeds, the
23 applicable terms of that legislation
24 Related to corrective actions would be
25 apply if necessary."

1 MS. BLASTORAH: I am sorry, Mr. Chairman,
2 the paragraph was actually on page 14. The
3 interrogatory begins on page 13. It's the first full
4 paragraph on page 14.

5 Q. Mr. Tenaglia, I would like to return
6 at this point to roads as a means of access. At page
7 67 of your evidence you state that:

8 "Roads are classified for planning
9 purposes as primary, secondary and
10 tertiary access roads."

11 You then make reference to geometric
12 standards. Will you please briefly explain the
13 difference between road classifications for planning
14 purposes and geometric standards for roads?

15 MR. TENAGLIA: A. Yes. The three
16 classifications of roads are defined at page 34 of the
17 Class EA where it talks about primary, secondary and
18 tertiary roads.

19 As noted in the statement of evidence,
20 this classification of road access is for planning
21 purposes and are not the road standards. Those
22 classifications of access roads; primary, secondary or
23 tertiary, may have different geometric standards.
24 Geometric standard of a road is the engineering
25 standard to which the road is built.

1 If I might, I will elaborate on the road
2 classifications using some overheads.

3 MS. BLASTORAH: Again, Mr. Chairman, we
4 have copies of this package of overheads.

5 THE CHAIRMAN: Exhibit 692.

6 MS. BLASTORAH: If I could have a minute,
7 Mr. Chairman. I seem to have misplaced those.

8 (handled)

9 THE CHAIRMAN: Thank you.

10 MS. BLASTORAH: Mr. Chairman, I would ask
11 that that hard copy of the overhead be marked as an
12 exhibit. And what we have done is, this is a five-page
13 exhibit and it's a series of overlays that Mr. Tenaglia
14 will be using as overlays on the overhead, however, we
15 have given the parties each separate overlay on a
16 different piece of paper.

17 MR. TENAGLIA: The overlays aren't going
18 to work, so I'm going to use them as separate
19 overheads.

20 MS. BLASTORAH: Okay. I believe this is
21 Exhibit 692.

22 THE CHAIRMAN: That's correct.

23 MS. BLASTORAH: And that is titled:
24 Schematic of Road Network: Primary Secondary and
25 Tertiary.

1 ---EXHIBIT NO. 692: Five-page hard copy of overhead
2 entitled: Schematic of Road
3 Network: Primary Secondary and
 Tertiary.

4 MR. TENAGLIA: If we could look at the
5 overhead. If we can assume that this small portion
6 over the overhead is a portion of the management unit,
7 early in the planning process we have to identify areas
8 in which operations are eligible to be carried out in.

9 We go through the process of identifying
10 the primary road in the areas eligible for operations.
11 That primary road will provide access to the management
12 unit or portions of the management unit.

13 MS. BLASTORAH: Q. The eligible areas
14 are the areas indicated --

15 MR. TENAGLIA: A. Are the areas outlined
16 in green. That primary road is going to provide
17 long-term access to that portion of the management unit
18 or to those large areas that are eligible for
19 operations.

20 By long-term access, I mean generally in
21 excess of 15 years. Primary road is going to be an
22 all-weather road.

23 Q. Mr. Tenaglia, you said the expected
24 use of that road is long term. Is that a planning
25 concept?

1 A. Yes, it is. The road is going to be
2 regularly used for all timber management activities;
3 harvest, renewal, maintenance and that primary road is
4 regarded as permanent access.

5 The next stage in the process is to
6 identify harvest areas within the areas that are
7 eligible for operations. Those harvest areas are
8 outlined in yellow on the overhead.

9 MS. BLASTORAH: And on the hard copies,
10 Mr. Chairman, they are indicated by small dots.

11 MR. TENAGLIA: And those proposed harvest
12 blocks are identified during the planning process for a
13 five-year period.

14 To access those particular harvest blocks
15 within the management unit, we generally use secondary
16 access roads. Those are roads that generally run off
17 of the primary road system.

18 Secondary roads are all-weather roads,
19 they are not considered as permanent roads. Their life
20 expectancy is for a period of about five to 15 years
21 and they are generally not maintained after that
22 15-year period.

23 MS. BLASTORAH: Q. The secondary roads
24 are shown, I believe, as a red dotted line on the
25 overhead; is that correct?

1 MR. TENAGLIA: A. That's correct.

2 MS. BLASTORAH: And, Mr. Chairman, on the
3 hard copy they are a black dotted line -- dashed line.

4 MR. TENAGLIA: And in the final overhead,
5 when we identify the areas that are going to be
6 harvested on an annual basis, we use tertiary roads.
7 In this case they are the dotted green lines within the
8 yellow harvest blocks.

9 They are very short term, they are used
10 for -- they may be used for a period of one to five
11 years. They may provide subsequent access for renewal
12 activities. They are not maintained and quite often
13 the tertiary roads are reforested.

14 Tertiary roads generally run off of the
15 secondary access road but, in this particular case,
16 because the primary road is close to a harvest block,
17 the tertiary road can access a harvest area or a
18 tertiary road can come right off of the primary road
19 system.

20 MS. BLASTORAH: Q. Mr. Tenaglia, would
21 it ever be the case that tertiary roads might be
22 maintained for the short term for other timber
23 management activities?

24 MR. TENAGLIA: A. Yes, it is possible,
25 depending on the nature of the activity that has to be

1 carried out.

2 Q. Could you give an example?

3 A. If there is a significant renewal
4 activity that has to be carried out, planting operation
5 of some size, we may want to maintain a tertiary road
6 with a grade, some filling of wet holes possibly.

7 Q. Would you anticipate that that would
8 normally take place within that one to five-year span
9 that you have indicated?

10 A. Yes, I would.

11 Q. Thank you. Now, returning to the
12 difference between geometric standards and road
13 classifications for planning purposes, could you now
14 indicate what geometric standards are and how they
15 differ from what you have just described?

16 MR. TENAGLIA: A. The geometric
17 standards for any given road are going to vary
18 depending on the road's life expectancy, the terrain
19 difficulty, the purpose, the season of the haul, the
20 desired vehicle speed, acceptable road construction and
21 maintenance costs, and the volume of traffic that the
22 road is expected to support.

23 Mr. Adamson's evidence Document No. 2 of
24 the witness statement does identify the choice of
25 geometric standards that are available.

1 Q. When you say that he indicates the
2 choice, do you mean the choice itself or the factors
3 affecting the choice?

4 A. The factors affecting the choice.

5 Q. And the items that you just listed
6 that would influence the geometric standard, would that
7 be the same in most cases or would they vary from road
8 to road?

9 A. They will vary from road to road.

10 Q. Thank you.

11 A. I would like to -- you know, I have
12 taken some time to go through the explanation of these
13 classifications for two reasons: Firstly, for planning
14 purposes it's a road classification that determines
15 whether the access road is primary, secondary or
16 tertiary, it's not the road's geometric standard.

17 And, secondly, some confusion can arise
18 by the use of the term primary and secondary. That
19 term usually comes up through the forest management
20 agreements where there are primary and secondary road
21 standards. Such references do not directly relate to
22 the planning process, just to the geometric standard.

23 MS. BLASTORAH: And, Mr. Chairman, the
24 witnesses will attempt to be consistent in the use of
25 their term -- in their use of those terms throughout

1 the evidence because of that potential confusion
2 between the terminology in the FMAs and the terminology
3 for planning purposes.

4 The witnesses will refer to those
5 planning classifications as primary, secondary and
6 tertiary and they will indicate geometric standards
7 where it's the engineering standards that they are
8 speaking of.

9 THE CHAIRMAN: Very well.

10 MS. BLASTORAH: And just for the Board's
11 reference, the section in Mr. Adamson's evidence, which
12 is Document No. 2 in the statement of evidence, at
13 pages 118 to 126 he provided some more information on
14 geometric standards.

15 Q. At page 72 of the statement of
16 evidence, Mr. Tenaglia, you refer to winter roads and
17 ice roads. Where do they fit into the classification
18 system that you just described?

19 MR. TENAGLIA: A. Winter roads and ice
20 roads are a special type which I felt needed to be
21 identified. They are not a new classification of road.
22 If anything, they are just another geometric standard.

23 An important point to note is that in
24 some circumstances a winter road or an ice road may
25 serve as secondary access and that is in exceptional

1 cases. Even though the road is seasonal in nature,
2 where such a road provides secondary access as
3 described in the secondary access road classification,
4 then we follow that planning process for that
5 particular road.

6 An example of this may be where we have
7 secondary access but a winter road, for physical
8 limitations of building an all-season road, we may only
9 be able to build a winter trail or a winter road, or
10 because of the areas of concern, only winter roads may
11 be acceptable in those particular areas.

12 Q. I understand there was some interest
13 shown in the interrogatories that were received in the
14 timber management planning process as it relates to
15 access roads. Bearing in mind the distinction that we
16 have outlined on the overhead through the different
17 colours shown on Exhibit 689, will you please give the
18 Board a brief outline of that process with reference to
19 the blowup behind you, or you could put up the overhead
20 again if you like and the outline -- I'm sorry, if you
21 could refer to either one of those documents, it's
22 Exhibit 689.

23 A. Yes, I will do that, with the aid of
24 a number of overheads again. I should note that NOTOA
25 Interrogatory No. 7, MOE No. 1 and NAN's

1 Interrogatories 9 and 13 also address planning
2 concerns.

3 MS. BLASTORAH: And those have been
4 filed, Mr. Chairman.

5 At this time I think we would like to
6 file another package of overheads that Mr. Tenaglia
7 will be using in discussing this matter.

8 THE CHAIRMAN: Exhibit 693.

9 MS. BLASTORAH: (handed)

10 THE CHAIRMAN: Thank you.

11 MS. BLASTORAH: Mr. Chairman, I did mark
12 these A, B, C, and so on but unfortunately,
13 notwithstanding my efforts, the photocopier cut that
14 off. So they are in the sequence that they will be
15 presented.

16 THE CHAIRMAN: Okay. So we will start
17 off with the front page being A?

18 MS. BLASTORAH: Yes.

19 THE CHAIRMAN: Very well, we will number
20 them consecutively.

21 ---EXHIBIT NO. 693: Hard copies of overhead numbered
22 A-G consecutively.

23 MR. TENAGLIA: Mr. Chairman, the Class EA
24 speaks to different steps in the planning process for
25 access roads. The first reference is I guess on page

1 133 of the EA. There is the determination -- at that
2 particular page, there is the determination of the type
3 and the general location of primary access system. By
4 type, I mean whether primary access is by road, rail or
5 water, or a combination thereof. This planning for
6 primary access and the subsequent access follows a
7 sequence and I will run through that sequence.

8 MS. BLASTORAH: Q. The overhead you have
9 up now is Exhibit 693A?

10 MR. TENAGLIA: A. The first step in the
11 planning process is to identify primary roads within
12 the 20-year planning period. The one-kilometre general
13 direction corridor is determined for each primary road
14 required to access the eligible areas in the projected
15 operating areas.

16 The process requires that we identify a
17 consideration of alternatives, analysis of each
18 alternative, and rationale of preferred alternatives.
19 In some cases there may not be alternatives and, in
20 those particular cases, we have to provide
21 justification for that.

22 In identification of the one-kilometre
23 corridor, we identify the concerns we have to -- the
24 alternatives have to consider the other resource
25 features and the uses and the values by attempting to

1 avoid and minimize any impact that road may have on
2 those preliminary areas of concern.

3 Q. Mr. Tenaglia, just before you go on,
4 I see at the bottom you have a note to your last bullet
5 point on that first overhead:

6 "i.e., major values which cover large
7 areas and clusters of site-specific
8 values."

9 Could you explain what you mean by
10 clusters of site-specific values?

11 A. The preliminary areas of concern may
12 be made up of major values for example, a major tourism
13 area or major lakes, area between two or three major
14 tourism lakes. Clusters of site-specific values may be
15 a number of winter calving -- or moose concentration
16 areas. They are just small clusters of specific areas
17 of concern within a larger area.

18 Q. Thank you. The next overhead is
19 Exhibit 693B.

20 A. Once we have identified the primary
21 road within the -- the primary road corridor for the
22 20-year period, then we have to identify the primary
23 road within that corridor for the five-year period and
24 the planning process requires that we identify within
25 that one-kilometre corridor a 500-metre corridor and a

1 100-metre corridor wherever that road traverses or
2 impacts or could impact on an area of concern.

3 Q. Mr. Tenaglia, on that one, the
4 areas -- or the roads rather that are planned at the
5 five-year level, when is it anticipated those roads
6 will be constructed?

7 A. Could you repeat your question again?

8 Q. Yes. You have indicated on the
9 second overhead there that within the one-kilometre
10 corridor selected for the 20-year period, you refine
11 the location of the roads.

12 During that five-year period, which roads
13 would be identified at that five-year stage?

14 A. The roads that are going to be
15 constructed for those areas that are going to be --
16 where we are going to carry out any particular
17 operation, either harvesting or renewal activities.

18 Q. For the five-year period or the
19 20-year?

20 A. For the five-year period.

21 Q. Thank you. The next exhibit, or
22 overhead rather is Exhibit 693C.

23 A. The next step is to identify the
24 secondary roads that are going to be -- that are
25 proposed for the five-year term.

1 A 500-metre and a 100-metre corridor in
2 areas of concern are identified for every new secondary
3 road that is required to access areas that are proposed
4 for operations. The process again requires
5 consideration of alternatives, the analysis of each
6 alternative, and the rationale for preferred
7 alternatives.

8 There is a similarity between this
9 planning -- this, the planning for a secondary road and
10 a tertiary road -- excuse me, primary road. Both types
11 of road classification require those consideration of
12 alternatives, the analysis of each alternative, and the
13 rationale for the preferred alternatives.

14 And again, as I mentioned, we identify
15 for secondary roads a 500-metre corridor and a
16 100-metre corridor wherever that road traverses an area
17 of concern.

18 Q. The next overhead is Exhibit 693D.

19 A. The analysis of each alternative that
20 is carried out for both primary -- those primary roads
21 and secondary roads consists of four items: an
22 assessment of the effectiveness of providing access to
23 areas of operations, an assessment of how the areas of
24 concern have been accommodated, estimated construction
25 costs, transportation costs and maintenance costs, and

1 development of the use management strategies for both
2 primary and secondary roads.

3 Q. The next overhead is Exhibit 693E.

4 A. Now, when primary roads and secondary
5 roads are in proximity or may traverse or come in
6 contact with an area of concern, the process requires
7 that we again consider alternatives, do environmental
8 analysis of each alternative and provide the rationale
9 for the specific alternative which is selected.

10 The environmental analysis of each of
11 those alternatives consists of the identification of
12 potential environmental effects and determination of
13 the significance of those effects, and the
14 identification of potential preventative and mitigative
15 measures.

16 Q. The next overhead is Exhibit 693F?

17 A. The next step in the planning
18 requirements for access roads during the five-year term
19 involves tertiary roads.

20 We don't identify locations for tertiary
21 roads, but rather we identify where in areas of concern
22 tertiary roads may be -- may or may not be constructed
23 and any conditions on those tertiary roads. By
24 conditions I mean, again, where tertiary roads are not
25 permitted, or where special practices are required, for

1 example construction practices or use restrictions or
2 removal of those tertiary roads.

3 And the final step in the access road
4 planning is the determination of use management
5 strategies.

6 Q. This is Exhibit 693G.

7 A. Use management strategies are
8 required for each primary and secondary road. They
9 have to be documented in the timber management plan and
10 the supplementary documentation, they have to be
11 addressed during consideration of alternatives because
12 those use management strategies may very well
13 contribute to the decision of which is the preferred
14 corridor. And some of the optional considerations
15 include road closures, use restrictions and
16 non-maintenance or abandonment.

17 Q. Would those be the only possible
18 considerations?

19 A. No, those aren't the only possible
20 considerations. There may be a very specific --
21 site-specific option that we have to consider depending
22 on the nature of the area.

23 One particular one that comes to mind
24 that I'm familiar with is a road that parallels a canoe
25 route approximately a kilometre, two kilometres from

1 the canoe route for several kilometres and then it
2 crosses the canoe route, and the use management
3 strategy for that road calls for no hauling for a
4 six-week period when there is heavy use of the canoe
5 route. So it is very site-specific.

6 Q. Thank you. Mr. Tenaglia, in both
7 their statement of issues and their interrogatories the
8 OFIA/OLMA raised a concern that an access system must
9 be cost effective. Will you please describe some of
10 the factors which can affect the cost of a road?

11 A. The factors that might affect the
12 cost of a road are again very site-specific. Some of
13 the situations could be road construction aspects,
14 whether there is gravel available, the number of water
15 crossings on a particular road, areas of concern and
16 how they are treated will affect the cost of a road,
17 the site, the terrain, the distribution of the harvest,
18 the amount of wood that has to come off using a
19 particular road is going to affect the costs.

20 Any condition, for example, on harvest
21 operations that is going to lengthen the period that
22 the road has to be used will affect the costs of that
23 road.

24 Lack of options certainly may affect
25 costs, use management strategy requirements that a road

1 be maintained or having to remove a road may negatively
2 affect the delivery of other timber management
3 activities. Road standards, having to put in a winter
4 road or a secondary road where a different type of road
5 standard may have been required.

6 If I can just go back to the planning
7 aspects, Panel 15 will be discussing the details of the
8 planning requirements for access roads. The specific
9 issues that I am going to be addressing are the issues
10 of tertiary roads and use management strategies.

11 We have received some interrogatories on
12 the issue of planning of tertiary roads, particularly
13 interrogatory from NOTOA No. 7 which asks why road
14 systems -- why all road systems are not included in the
15 planning process and NAN Interrogatory No. 13 which
16 asked how areas of concern are considered in the
17 planning and design and construction of tertiary roads
18 and those interrogatories have been filed.

19 MS. BLASTORAH: They are contained in the
20 package of interrogatories we filed, Mr. Chairman.

21 Q. With regard to NOTOA's Interrogatory
22 No. 7, do you agree that all road systems are not
23 included in the timber management planning process as
24 they indicated in their question?

25 A. No, not at all. As I have explained,

1 all roads are considered during the planning process
2 although the location of tertiary roads is not set out
3 in the timber management plan, but all roads are
4 considered.

5 Q. Why are the locations of tertiary
6 access roads not identified in the timber management
7 plan?

8 A. Well, tertiary roads are built for a
9 very short-term use. Again, as I mentioned, one to
10 five years with the main objective of providing access
11 for the given year's harvest and subsequent -- and
12 possibly subsequent renewal activities.

13 They are built immediately prior to the
14 harvest in the specific location and density of the
15 tertiary road is influenced by the harvesting system
16 and the terrain. It's not practical to identify the
17 specific location of tertiary roads in advance nor is
18 it necessary.

19 THE CHAIRMAN: These would be identified
20 though in the annual work plan; would they not, or
21 would they?

22 MR. TENAGLIA: The tertiary roads?

23 THE CHAIRMAN: Yes.

24 MR. TENAGLIA: No, they are not.

25 THE CHAIRMAN: They are not in the annual

1 work plan either?

2 MR. TENAGLIA: No, sir.

3 MS. BLASTORAH: We will be coming back to
4 that a little later, Mr. Chairman, and giving some more
5 information about how and where the locations of those
6 roads is indicated.

7 MR. TENAGLIA: It is up to the foreman
8 and the equipment operator to decide how best to deal
9 with the specific weather and terrain conditions in
10 selecting the specific location for tertiary roads.

11 MS. BLASTORAH: Q. Does that apply to
12 operations in areas of concern as well?

13 MR. TENAGLIA: A. There is more
14 operating restrictions in areas of concern. The
15 foreman and the equipment operator would not have as
16 much flexibility in building roads in areas of concern.

17 If the area of concern were at the site
18 of a water crossing, for example, certain provisions of
19 the Environmental Guidelines for Access Roads and Water
20 Crossings would apply.

21 Mr. Adamson is going to provide more
22 details on those guidelines and the training in
23 conjunction with those guidelines.

24 THE CHAIRMAN: Ms. Blastorah, I
25 understand that you are going to cover this maybe in

1 some more detail.

2 Why, Mr. Tenaglia, wouldn't there be some
3 process whereby those who might be impacted in an area
4 of concern might have the opportunity to question or
5 argue against the specific location of a tertiary road?

6 MR. TENAGLIA: There is that opportunity,
7 Mr. Chairman, in areas of concern for any interested
8 party to identify those concerns. And in those areas
9 of concern, we would apply certain -- or whatever
10 conditions are appropriate on those tertiary roads.

11 But in areas of normal operating areas, I
12 guess our feeling is there is no need to identify the
13 tertiary roads because they are so short-term nature.

14 THE CHAIRMAN: But if -- unless I have
15 misunderstood what you have said, unless within an area
16 of concern somebody who had a concern didn't sort of
17 indicate that they didn't want any roads in a specific
18 place, nobody would really know where the roads were
19 intended to go until the foreman was out there on the
20 site and decided to put one in in a particular spot.
21 Is that correct?

22 MR. TENAGLIA: If it's identified that no
23 tertiary road should be -- if the condition is that no
24 tertiary road be allowed in that area of concern, then
25 that may be a decision that's identified in the

1 planning process.

2 MS. BLASTORAH: Where --

3 THE CHAIRMAN: But is it an all or
4 nothing thing? Is it sort of no roads within the area
5 of concern, or can you specifically cut out a road
6 going in a particular portion of an area of concern and
7 then leave it open for the rest of it to be at the
8 discretion of the foreman?

9 MR. TENAGLIA: That's a little bit of
10 everything if you want it. In certain cases you may
11 say -- in a particular area of concern you may very
12 well say: No roads whatsoever in this area of concern.
13 In another situation you may say: Yes, you may use
14 tertiary roads for a very short term and then you have
15 to destroy them or those tertiary roads cannot go
16 anywhere -- there may be a restriction on how close
17 those tertiary roads may go to your area of concern.

18 MS. BLASTORAH: Q. Mr. Tenaglia, a
19 couple of questions arising out of that. When you say
20 destroy the roads, could you give an example of what
21 you mean by that?

22 MS. TENAGLIA: A. I guess I should
23 say -- well, an example of destroying the road, a
24 tertiary road anyway, would just be site preparing the
25 road using site prep equipment, or you may bulldoze the

1 entrance of that road.

2 Q. And when you indicated that there
3 could be conditions put on whether or not tertiary
4 roads could be built in a certain area of concern or
5 where those roads could be built, for example, at what
6 stage of the planning process is that indicated?

7 A. That's identified during the
8 preparation of the timber management plan and those
9 kind of conditions I believe are listed in Table 4.12
10 of the timber management plan where you identify the
11 areas of concern and any conditions on tertiary -- any
12 conditions on tertiary roads in those areas of concern.

13 Q. And what opportunity does the public
14 have for any input as to what those conditions may be?

15 A. Well, the opportunity comes through
16 the plan review and plan input.

17 Q. And that's part of the normal area of
18 concern planning process?

19 A. That's correct.

20 Q. At the five-year level?

21 A. That's correct.

22 Q. And is there any limitation on the
23 type of prescription or any restraint on the type of
24 prescription that might be put on to deal with
25 site-specific concerns in any given area of concern?

1 A. No, I don't believe there is any
2 limitation. Again, it is very site-specific. It
3 depends on what the value is that you are trying to
4 protect.

5 Q. Thank you. I believe we have -- did
6 you have anything else you wanted to add on that last
7 point, Mr. Tenaglia, before we went on to the next
8 area?

9 A. Again, maybe just the business of
10 laying out tertiary roads. The exact layout of
11 tertiary roads and the construction of those tertiary
12 roads is really dependent on a number of factors,
13 including the effective application of the equipment
14 available.

15 You may have a D6 or you may have a D8L
16 and the two pieces of equipment can certainly -- will
17 dictate a different type of road or aid in the location
18 of which that tertiary road can be built. The nature
19 of the stand or the stands to be harvested or renewed
20 will impact on the exact layout.

21 Q. Just before you go on, Mr. Tenaglia,
22 you used two terms, D6 and DHL, was it?

23 A. D8L, I guess they are just types of
24 tractors.

25 Q. Thank you.

1 A. As I have explained before, tertiary
2 roads are very short term. In some cases they are
3 surfaced, in other cases they are not surfaced. They
4 are not maintained -- generally not maintained beyond
5 the period of their use and, in fact, in many cases
6 they are reforested. It's not anticipated that their
7 impact will be significant.

8 For these reasons we do not identify the
9 location of the tertiary roads but, again, we plan on
10 where tertiary roads cannot go or any conditions on
11 tertiary roads.

12 Q. Would that be done in all cases with
13 regard to tertiary roads?

14 A. It would be done on the nature of the
15 value that you are trying to protect. For example, the
16 decision at the five-year planning stage may be that
17 normal operations may be carried out in an area of
18 concern; in other cases, it may be that there are
19 conditions.

20 And I would like to use a hypothetical
21 example on this next overhead.

22 MS. BLASTORAH: Mr. Chairman, I believe
23 that will be Exhibit 694?

24 THE CHAIRMAN: That's correct.

25 MS. BLASTORAH: And that's titled:

1 Location of Tertiary Roads. (handed)

2 THE CHAIRMAN: Thank you.

3 ---EXHIBIT NO. 694: Overhead entitled: Location of
4 Tertiary Roads.

5 MR. TENAGLIA: In this particular
6 example, Mr. Chairman, we have a waterway park. The
7 green or part of -- the green is the 200-metre buffer
8 on the park, the waterway park is the blue, that's the
9 value. The area of concern is any area around that
10 value which may impact on the value.

11 The yellow is the areas of operation, and
12 in the planning process for an area of concern you may
13 identify conditions on the timber management activities
14 that may be carried out. You may indicate that
15 harvesting may only be carried out during a certain
16 period of time, you may indicate that the site prep
17 operation in that area that you are going to operate in
18 may only be carried out in a certain period of time,
19 you may want to indicate the type of maintenance
20 operation that's going to be carried out.

21 And along that same line, you may
22 indicate conditions on tertiary roads. In this
23 particular case here the condition is that no tertiary
24 road be located within 200 metres of the buffer and
25 this --

1 MS. BLASTORAH: Q. Sorry, that buffer is
2 the area indicated in green?

3 MR. TENAGLIA: A. That's right.

4 Q. And is that part of the waterway
5 park?

6 A. Yes, it is.

7 Q. Thank you.

8 A. And, again, the intention -- the
9 intent there would be to minimize any potential access
10 or uncontrolled access to that waterway park. And
11 another condition on the tertiary road there may also
12 be just the removal of those tertiary roads or the site
13 prep of those tertiary roads after renewal activities
14 or after planting.

15 Q. Mr. Tenaglia, if you don't
16 identify -- or since you don't identify the location of
17 tertiary roads in the planning process, how and when
18 would you know that a creek, for example, is to be
19 crossed by a tertiary road, and how would you know
20 whether crossing that creek is in fact acceptable, and
21 how would you know the location of the crossings and
22 the details of the proposed structure? That's kind of
23 a lot of questions.

24 A. You have asked a lot of questions.
25 To answer the one question: How would you know whether

1 the crossing of the creek is in fact acceptable.
2 That's identified during the planning process. A
3 condition on that area of concern may mean that there
4 is no crossing allowed.

5 To answer your other questions, how and
6 when would you know that the creek is going to be
7 crossed, and how would you know the location of the
8 crossing and proposed structure?

9 Under the provisions of the Forest Fire
10 Prevention Act, the Lakes and Rivers Improvement Act
11 and the recently amended Public Lands Act, the issuance
12 of work permits is required for any activity that's
13 carried out on Crown land or any activity such as
14 logging, construction of roads, construction of water
15 crossings.

16 The Ministry has recently introduced a
17 multi-purpose work permit which is going to serve as
18 the authorizing document for approvals under each of
19 those Acts. The documentation of all water crossings
20 will now appear in the application for a work permit
21 and in the work permit that's issued.

22 MS. BLASTORAH: We would like to file a
23 copy of that now, Mr. Chairman, and we have copies to
24 distribute to the parties as well.

25 We will be filing as one package both the

1 application for the permit as well as the permit
2 itself.

3 THE CHAIRMAN: Okay. Exhibit 695.

4 MS. BLASTORAH: (handed)

5 THE CHAIRMAN: Thank you.

6 ---EXHIBIT NO. 695: Copy of application for work
7 permit and copy of work permit.

8 MS. BLASTORAH: Q. Mr. Tenaglia, perhaps
9 while that is being distributed I would like to ask you
10 one small question.

11 When you spoke of -- when you answered my
12 questions about how and when you would know whether a
13 particular creek were being crossed, and you indicated
14 that one way would be -- or the way would be through
15 the multi-use work permit.

16 Is there any distinction between that and
17 how that location would be known for primary and
18 secondary roads? How would the exact, or the
19 particular location be identified on primary or
20 secondary roads?

21 MR. TENAGLIA: A. The particular
22 location is identified in the planning process where
23 you have to identify that crossing of a river or creek
24 through the area of concern where you have the one
25 metre -- 100-metre planning in an area of concern.

1 Q. So the only situation where you would
2 have to turn to this document to determine the location
3 would be tertiary roads?

4 A. That's correct.

5 Q. Thank you.

6 A. I should illustrate that this really
7 takes place at the annual work schedule stage. The
8 document -- this document, the work permit, is
9 initiated during the district review of the annual work
10 schedule.

11 If I might just go through a couple
12 portions of that work permit. I think the first page
13 of the document that was circulated is the application
14 for work permit. That's just the general information
15 that's required on all applications.

16 The next page is the instructions on the
17 completion of the application form. I would like to
18 bring to your attention the third line of the first
19 paragraph where it says:

20 "No work can be carried out until the
21 application is approved for water
22 crossings, for any road construction, for
23 resource harvest access roads."

24 You would then go to part (e) and part
25 (f) -- or part (f) and you would fill out those

1 appropriate forms. And, again, the bottom of that
2 particular page indicates that this work permit is
3 issued under the authority of one of those or all three
4 of those particular Acts.

5 Q. Mr. Tenaglia, if I could just return
6 to the first page for a moment, I see that the
7 information obtained -- there is a notation there:

8 "The information obtained on this
9 application is a public record which is
10 accessible upon request."

11 That's correct, I take it?

12 A. Yes, it is.

13 Q. And so if a member of the public
14 wanted to see this application and the details
15 contained in it, they could do so on request?

16 A. Yes, they can, with the exception of
17 part (b) -- the bottom of part (b) there is some
18 requirement for confidentiality when it comes to
19 mineral exploration.

20 Q. But that part just deals with mineral
21 exploration activities?

22 A. That's correct.

23 Q. Thank you.

24 THE CHAIRMAN: Mr. Tenaglia, is the
25 Minister of Natural Resources the minister responsible,

1 or is it the Minister of the Environment under the
2 Lakes and Rivers Improvement Act under that legislation
3 itself?

4 MR. TENAGLIA: It is the Minister of
5 Natural Resources.

6 THE CHAIRMAN: Okay. The Minister of the
7 Environment isn't involved in that piece of
8 legislation; is that correct?

9 MR. TENAGLIA: The Minister -- the
10 Ministry of the Environment does get involved in
11 inspection of water crossings, yes, may get involved in
12 inspection of water crossings.

13 THE CHAIRMAN: I guess what I am asking:
14 Has any authority of any other minister been delegated
15 to the Minister of Natural Resources, in effect, under
16 this scheme to provide a work permit covering these
17 three pieces of legislation?

18 MR. TENAGLIA: I don't believe so, sir.

19 MS. BLASTORAH: Q. Who issues this work
20 permit, Mr. Tenaglia?

21 MR. TENAGLIA: A. The Ministry of
22 Natural Resources does.

23 MS. BLASTORAH: Mr. Chairman, perhaps
24 just for your reference - you don't necessarily have to
25 look at it now - I would refer you to page 7 of

1 Exhibit -- I am not sure of the exhibit number, it is
2 the Environmental Guidelines for Access Roads and
3 Waters Crossings, Exhibit 683 I believe.

4 There is an indication there of
5 provincial legislation relating to access and it does
6 indicate:

7 "Approval is required for the
8 construction of a dam across a
9 watercourse. A bridge or culvert may act
10 as a dam in certain circumstances. A
11 technical review is necessary to
12 determine if an application is required."

13 And that Act, the Lakes and Rivers
14 Improvement Act, is administered by the Ministry of
15 Natural Resources.

16 THE CHAIRMAN: Okay, thank you.

17 MR. TENAGLIA: If I could bring to your
18 attention again part (e) of the application for work
19 permit. No. 1 of part (e) indicates that:

20 "Detailed location of all roads and
21 trails must be included, as well as a
22 sketch showing all water crossings."

23 And the appropriate information would
24 have to be filled out.

25 Information in Part 8 would be pertaining

1 to any bridge and information for culverts would be
2 filled out in Part 9 of that particular section.

3 I should indicate to the Board that this
4 particular application for work permit and this
5 multi-purpose work permit is very new with the
6 Ministry. We used to have work permits issued under
7 the Forest Fire Prevention Act prior to this year.

8 This was to be implemented April 1st,
9 1989, but because of some technical difficulties of
10 printing, the actual application and the work permit
11 didn't get out to the field until May, I believe.

12 There is a commitment on the
13 Minister's -- Ministry's part to review this
14 application and the work permit with the industry and
15 with other interest groups to ensure that the
16 information that we are collecting is the appropriate
17 information so that this system will work.

18 The multi-purpose work permit replaces
19 the improvement permit under the Section 13 of the
20 Public Lands Act and provides approval to place works
21 within a waterbody under the Lakes and Rivers
22 Improvement Act and functions as a work permit under
23 the Forest Fire Prevention Act.

24 The Act now provides --

25 MS. BLASTORAH: Q. Which Act is that?

1 MR. TENAGLIA: A. The amended Public
2 Lands Act now provides for significant fines for
3 contravention of the Act. It provides for
4 inspection -- inspecting officers to issue stop work
5 orders for activities carried out outside of the work
6 permit authorized -- outside of the authorization of
7 the work permit.

8 It provides for court orders requiring
9 cessation of unauthorized operations and/or the removal
10 of fending structures, as well as the rehabilitation of
11 the sites where the condition of the work permit have
12 been contravened.

13 I believe these are very strong control
14 measures and will be effective in dealing with any
15 particular problems.

16 When an application is received for a
17 work permit to construct a water crossing, the
18 application is reviewed by the affected programs within
19 a particular district. The large water crossings are
20 forwarded to the regional engineers for their reviews.
21 In many cases of water crossings, are physically
22 inspected by the district staff.

23 The interested programs will identify any
24 conditions they feel are appropriate to protect the
25 identified values, and those conditions are set out in

1 schedule (e) of the work permit itself.

2 Q. Mr. Tenaglia, just a couple of
3 questions. You indicated that the conditions -- well,
4 perhaps I will ask you one other question on the form
5 first.

6 I see at the top of part (e) there is a
7 point No. 1 states:

8 "Include a sketch showing detailed
9 location of road and all water
10 crossings."

11 And then on the next page in the package
12 is a sketch. Would that be the sort of thing that
13 would be submitted, and is that a requirement of the
14 form?

15 A. The sketch at the back of the form
16 helps you fill out Part 8 of part (e). The detailed
17 location, the sketch that's required is the location of
18 the road or the location of the particular water
19 crossing.

20 Q. So there would be an actual sketch
21 required?

22 A. Of the location of the water
23 crossing, yes.

24 Q. Thank you. Now, you were speaking
25 about conditions that could be contained in this work

1 permit. How are those conditions developed and how do
2 they relate to the area of concern prescription in the
3 timber management plan?

4 A. These conditions are developed to
5 address a particular situation to which a work permit
6 relates and are quite specific in nature.

7 It is anticipated that the conditions or
8 the restrictions related to the area of concern, which
9 are contained in the timber management plan, are going
10 to be transferred to the work permit.

11 On the other hand, a work permit may
12 include any other conditions which are over and above
13 those identified in the timber management plan in order
14 to enhance, I guess, the protection of the specific
15 value where that particular crossing may occur.

16 Q. And are those area of concern
17 prescriptions the type that you were indicating in
18 response to the Chairman's question earlier?

19 A. Yes, and also more specific
20 information on the technical aspects of actually
21 placing a water crossing, a culvert into a creek. And
22 I think Mr. Adamson is going to address those specific
23 type of conditions.

24 I should note that in schedule (e) of the
25 work permit one of the standard conditions reads:

1 "Roads must be constructed in accordance
2 with the Environmental Guidelines for
3 Access Roads and Water Crossings, and
4 that all roads and trails constructed on
5 Crown land must be open to use by the
6 public unless specifically stated by the
7 Ministry of Natural Resources."

8 Mr. Adamson is going to talk to the
9 Environmental Guidelines for Access Roads and Water
10 Crossings.

11 An important mechanism for the delivery
12 of those guidelines will be the multi-purpose work
13 permit. That's where we will be identifying the
14 specific conditions under which the work -- the water
15 crossing may be carried out.

16 Q. And you indicated that the work
17 permit requires compliance with the Environmental
18 Guidelines for Access Roads and Water Crossings.

19 MS. BLASTORAH: I would just like to
20 point out, Mr. Chairman, there are two part (e)s, if
21 you will. There is a schedule (e) to the
22 application -- or a part (e) rather, to the
23 application, as well as a schedule (e) to the work
24 permit itself.

25 Q. So I understand -- if I understand

1 you correctly, Mr. Tenaglia, your reference there was
2 to schedule (e) to the work permit itself?

3 MR. TENAGLIA: A. Yes, that's where you
4 would identify the conditions.

5 Q. So any breach of that condition would
6 be a breach of the conditions of the work permit?

7 A. Yes.

8 Q. Thank you.

9 MS. BLASTORAH: This would be an
10 appropriate point for a break, Mr. Chairman.

11 THE CHAIRMAN: Okay. We will break for
12 20 minutes. Thank you.

13 ---Recess taken at 12:35 p.m.

14 ---On resuming at 1:05 p.m.

15 THE CHAIRMAN: Thank you. Be seated,
16 please.

17 MS. BLASTORAH: Q. Mr. Tenaglia, the
18 last area you indicated at the outset of your evidence
19 that you would be addressing was use management
20 strategies. Would you please explain how use
21 management strategies fit into the planning of access
22 roads?

23 MR. TENAGLIA: A. Yes, I will do that
24 briefly. Again, the reason for speaking to this
25 particular topic is the amount of interest shown by the

1 other interest groups.

2 For example, NAN Interrogatory No. 7
3 asked for examples of use management strategies
4 developed to address native concerns over access; MOE
5 Interrogatory 7 asked about the policy directing road
6 closures; and NOTOA Interrogatory 12 and 27 asked how
7 remote tourism values and operators are protected and
8 the extent to which road use controls are being
9 effected.

10 For each primary and secondary road a use
11 management strategy is developed in the timber
12 management plan, and that use management strategy is
13 developed primarily under requirements for the
14 protection of the other resource features and land uses
15 or values in the areas of concern that are traversed or
16 in the vicinity of the particular road.

17 The options for managing use of access
18 roads may be road closures, use restrictions or
19 non-maintenance or physical abandonment.

20 For example, in the case of road
21 closures, it may be signs or gates prohibiting the use
22 of that road. Use restrictions may include restricting
23 use of the road to access a particular lake or
24 restricting the use of the road for a period of time,
25 or to a class or classes of the public.

1 Non-maintenance may be the strategy, just
2 to let the road deteriorate naturally, or physical
3 abandonment where the road is destroyed or bridges and
4 culverts are removed so that the road cannot be used,
5 or to take -- and also that particular measure is also
6 taken to protect the environment.

7 Conversely, the use management strategy
8 may call for the continued maintenance.

9 Q. Are those the only options for use
10 management strategies that are available?

11 A. No, there is really no exhaustive
12 list. They are developed on a site-by-site basis.

13 Q. MOE raised in their statement of
14 issues the question of how road abandonment fits in the
15 on-going need for access for monitoring programs. Is
16 that a problem?

17 A. That certainly could be a problem if
18 physical abandonment -- if we were physically
19 abandoning all of our roads, but abandonment isn't just
20 physical abandonment.

21 More often than not, roads are naturally
22 abandoned or are left to deteriorate over a period of
23 time where a road has -- and where a road has
24 deteriorated, where heavy vehicles cannot use a road.
25 For monitoring purposes, we just use light vehicles or

1 we access the area by foot.

2 And as time goes on, direct access to the
3 area is less required and we would put more emphasis on
4 the use of air access using a supplementary aerial
5 photography or infrared photography.

6 Q. If there is a perceived need for
7 better access for monitoring purposes, could that be
8 addressed through the use management strategy?

9 A. Well, certainly. At the time when we
10 initially developed the use management strategy or if
11 the need subsequently arises, the use management
12 strategy could be amended in the timber management plan
13 to address that need.

14 Q. Where is the use management strategy
15 documented?

16 A. It is documented -- it is in the
17 supplementary documentation to the timber management
18 plan and it generally identifies the access road by
19 name or by number; the standard of the road, whether it
20 is primary, secondary; the type of road, whether it is
21 a public road or a private road; the years that -- the
22 number of years that the road is going to be used; any
23 use controls or any -- or the form of abandonment
24 that's going to be applied to that particular road.

25 Q. And just in listing those items, Mr.

1 Tenaglia, you indicated that it would normally indicate
2 the road standard, whether it was primary, secondary or
3 tertiary.

4 Did you mean the road classification for
5 planning purposes, or did you mean the standard as set
6 out -- did you mean geometric standard? Because you
7 using primary, second and tertiary, but you also used
8 the word standard.

9 A. It's the road standard that is
10 identified.

11 Q. The geometric standard?

12 A. Yes.

13 Q. Thank you.

14 A. I guess one final comment, it's noted
15 on page 113 and page 114 of the statement of evidence,
16 all public and non-classified access -- forest access
17 roads are required to be open to the public use unless
18 closed under the Public Lands Act.

19 In Exhibit 685 that has been filed with
20 the Board, the Resource Access Policy binder, one of
21 the particular strategies within that binder No.
22 LM-90503 indicates that for any road on Crown land to
23 be recognized as a private road, must be issued -- a
24 land use permit must be issued for that road, and
25 condition on all land use permits for private roads

1 must contain a condition that the road shall be kept
2 open to the public generally and will not be closed to
3 public travel without the approval of the district
4 manager.

5 MS. BLASTORAH: Now, Mr. Chairman, we
6 will be filing copies of that strategy and making
7 copies available to the parties. Somehow we didn't
8 bring them over today.

9 But the actual strategy is contained in
10 the green binder that was filed as Exhibit 685 as
11 indicated by Mr. Tenaglia.

12 Q. Finally, Mr. Tenaglia, is there any
13 provision in forest management agreements with regard
14 to whether access roads are to be open or not?

15 MR. TENAGLIA: A. Yes. It's Section 27
16 (6) that speaks to the fact that all the roads, primary
17 and secondary, should generally stay -- should be open
18 to travel by the public generally.

19 Q. And is that a standard provision in
20 FMAs?

21 A. Yes, it is.

22 Q. Thank you.

23 MS. BLASTORAH: Mr. Chairman, those are
24 my questions of Mr. Tenaglia.

25 THE CHAIRMAN: Thank you.

1 MS. BLASTORAH: I would like to turn next
2 to Mr. Adamson, and perhaps we will file at the outset
3 of his evidence a package of overheads that he would be
4 using during his evidence.

5 We have marked them A to P and I guess
6 they will be Exhibit...?

7 THE CHAIRMAN: 696.

8 MS. BLASTORAH: 696. (handed)

9 THE CHAIRMAN: Thank you.

10 ---EXHIBIT NO. 696: Hard copies of overheads numbered
11 A to P to be used by Mr. Adamson
in evidence-in-chief.

12 MS. BLASTORAH: Q. Mr. Adamson, what are
13 the principal messages you wish to convey to the Board
14 through your evidence?

15 MR. ADAMSON: A. The main messages I
16 hope to convey today and tomorrow to the Board are,
17 firstly, that some impacts of road and water crossing
18 construction are inevitable, but we take efforts to try
19 and minimize these and to make sure that the duration
20 of time is short.

21 A second message is by using good design
22 and construction practices unnecessary long-term
23 impacts can be eliminated.

24 And what I would like to do is illustrate
25 that these objectives are accomplished by using

1 engineering methods and by following existing policies
2 and guidelines that apply to access activities.

3 To just summarize how we are going to
4 present the direct evidence, I have a few highlights of
5 the written material which I think I would like to
6 state quickly that I feel is important that the Board
7 should know, and also some of the issues that have been
8 raised in interrogatories and in the statement of
9 issues. I will try to cover some of those, for
10 example, road maintenance and abandonment.

11 There will be four areas I would like to
12 concentrate on. One is a brief summary of how this
13 booklet was developed and I would like to go through it
14 with you to point out the highlights of it and how it
15 is intended to be used. One reason for doing that is
16 that it wasn't -- this is not covered in the written
17 evidence material and I think it would be interesting
18 to know how it came about and how it is intended to be
19 used.

20 The second area I would like to explain
21 is the background of Bridge Management in Ontario, why
22 our concern for bridges and elements of the new policy
23 that has just come out and that was just issued last
24 month and it's this document here, No. 686, Final
25 Report on Crown Land Bridge Management. And, again,

1 it's not covered in the written evidence material
2 either.

3 Q. Mr. Adamson, you held up a document
4 prior to 686 and indicated you would be talking about
5 it. Could you just give us the name of that?

6 A. Environmental Guidelines for Access
7 Roads and Water Crossings.

8 MS. BLASTORAH: That's Exhibit 683, Mr.
9 Chairman.

10 MR. ADAMSON: 683, yes.

11 A third area I would like to highlight
12 with slides, photographic slides is some of the
13 engineering considerations in selecting water crossing
14 locations and in determining what types of structure
15 should go in. For example, culverts and bridges. And
16 by using examples of structures we put in, I will
17 demonstrate how these types of engineering decisions
18 are made.

19 MS. BLASTORAH: Q. Mr. Adamson, will you
20 begin by briefly explaining what makes access roads
21 different from highways?

22 MR. ADAMSON: A. They are not built or
23 maintained to the same standards because the purposes
24 and traffic volumes are different than highways. The
25 legislation governing access roads is the Public Lands

1 Act and it's not the Public Transportation and Highway
2 Improvement Act which applies to highways and municipal
3 roads.

4 So because of the different legislative
5 mandate, there is a different approach to liabilities,
6 maintenance responsibility and also public use of the
7 roads. The general principle on access roads is: use
8 at your own risk.

9 Q. In their Interrogatory No. 6 the
10 OFIA/OLMA asked about the application of the policy and
11 guidelines referenced in your written material.

12 Would you briefly describe the policies,
13 or what policies and direction are available to
14 Ministry staff responsible for administering access
15 road activities?

16 A. The four documents that I have here
17 which were filed earlier as exhibits, the first one
18 being the Environmental Guidelines for Access Roads and
19 Water Crossings No. 683, which I will explain in detail
20 as I mentioned.

21 Exhibit 684 is this blue book. Your copy
22 is just a photocopy. It's called Guidelines and
23 Criteria for Approvals under Lakes and Rivers
24 Improvement Act and it provides direction and guidance
25 to staff in their administration of the Act and it

1 includes technical information that is used in
2 reviewing water crossings to determine whether the Act
3 applies or not.

4 Q. And the Act is the Lakes and Rivers
5 Improvement Act?

6 A. Lakes and Rivers Improvement Act,
7 that's correct. So that is used when we are reviewing
8 water crossing proposals.

9 The third document is this one here
10 Exhibit 685, Resource Access Roads, Policy and
11 Implementation Strategies and Guidelines. It contains
12 a short policy statement which is included in the
13 evidence and it gives guidance in the various areas of
14 program direction, construction, maintenance and use
15 control and management.

16 And the fourth document I would like to
17 highlight again is the Exhibit 686 the Report on Crown
18 Land Bridge Management which I will explain a little
19 further later on.

20 So these are the four documents that are
21 used by field staff in administering the access
22 component.

23 Q. Thank you. Would you please explain
24 how the Environmental Guidelines for Access Roads and
25 Water Crossings, which are Exhibit 683, were developed?

1 A. The guidelines were prepared in
2 response to a need identified by field staff and also a
3 need identified during government review of the Timber
4 Class EA.

5 Work on the guidelines began about two
6 and a half years ago and I would like to use some
7 overhead transparencies to just define -- go through
8 how the guidelines were developed, some of the
9 principles behind them?

10 These overheads were with the package
11 filed as Exhibit 696.

12 MS. BLASTORAH: And again, Mr. Chairman,
13 they will be -- we will be going through them in the
14 order they are presented in in 696, so the first one is
15 Exhibit 696A.

16 THE CHAIRMAN: Very well.

17 MR. ADAMSON: The first task was to
18 define the scope of the guidelines: What should they
19 cover. We felt they should deal with the natural
20 environment and doesn't include the socio-economic
21 impacts of roads.

22 They should apply to all access roads and
23 by 'all', in the timber management context, that
24 includes tertiary roads, primary roads, secondary roads
25 and it also, outside of timber management, it includes

1 other roads that are built on Crown land. For example,
2 cottaging roads or now mining exploration roads.

3 We didn't want to include safety issues
4 in the guidelines or engineering design methods, and it
5 does not address decision-making, how these decisions
6 are made, where certain techniques must be followed, it
7 doesn't deal with that aspect of it.

8 Q. Why did you elect not to cover safety
9 or engineering in the guidelines?

10 A. It would have to be a textbook on
11 engineering matters. We tried to concentrate on the
12 environment and as we have seen, the one aspect of just
13 bridge management alone takes up a fairly -- fair sized
14 volume document and we didn't feel that was the right
15 context to deal with those issues.

16 Q. Thank you. The next overhead will be
17 696B.

18 A. So with that scope in mind, the
19 objectives of the guidelines -- this is a statement on
20 them: They should meet the requirements of the Timber
21 Class EA. And by that, I mean on page 190 of the Class
22 EA there is reference to a construction manual that
23 will be developed with the forest industry to define
24 techniques and methods that will be followed. So we
25 had to produce a document that met that expectation.

1 Now, we felt it should be a useful source
2 of information for people in the field, they could draw
3 on it. It should document current good practice. A
4 lot of what has been done in the past has been good
5 practice and it's a matter of trying to determine what
6 we felt was good, write it down, document it and
7 distribute that information to others.

8 It should be consistent with other
9 jurisdictions in other provinces, for example, or in
10 the United States. And the costs of implementation
11 should be kept as reasonable as possible.

12 In developing it we tried to learn from
13 others by doing a literature review and we were able to
14 obtain guidelines from other jurisdictions in Ontario,
15 for example Newfoundland, Nova Scotia, Alberta and also
16 in the United States, U.S. Forest Service all had
17 environmental guidelines of this type from which we
18 could draw.

19 We felt the content should be determined
20 by field staff in the Ministry and the industry, people
21 who build roads should be involved in deciding what
22 goes in the document, and the guidelines should be
23 practical for use on all access roads.

24 MS. BLASTORAH: And that overhead is
25 Exhibit 696C and the next one will be 696 D.

1 MR. ADAMSON: Some of the important
2 messages we tried to convey in the document throughout
3 it were such as: environmental sense is just common
4 sense. Much of what is done now is good practise. Do
5 it right the first time to save money and protect the
6 environment. Follow good practices everywhere
7 possible. And mitigation techniques must be used to
8 protect important values, values such as in an area of
9 concern.

10 MS. BLASTORAH: Q. Mr. Adamson, you
11 indicated that you felt it was an important message to
12 follow good practices everywhere possible. What do you
13 mean by that?

14 MR. ADAMSON: A. Wherever it's possible
15 to -- some good practices obviously don't apply
16 everywhere. Where it's possible, the choices to be
17 made between doing it one way or another way, we are
18 recommending that that particular good practice be
19 followed.

20 Q. So you didn't mean to imply that you
21 should follow good practices sometimes and bad
22 practices other times?

23 A. No.

24 Q. Thank you.

25 A. Okay. In developing the document we

1 gathered together the guidelines from other
2 jurisdictions as I mentioned and using these together
3 with our own experience with access roads in Ontario we
4 wrote a draft environmental guidelines.

5 And a technical advisory group was formed
6 of individuals from different organizations to review
7 that draft and subsequent drafts that were made up, and
8 the various disciplines that were on the group are
9 shown in the slide. And, as you can see, there's quite
10 a wide variety within the Ministry represented.

11 We had a representative of Ministry of
12 Environment on the group, two representatives from the
13 Ontario Forest Industries' Association and one from the
14 Ontario Lumber Manufacturers' Association.

15 This group debated the issues at some
16 length and the words that are in the document were
17 carefully chosen to try and meet the objectives of the
18 different parties involved.

19 We believed that the final document
20 satisfies our needs also, is workable and acceptable to
21 the forest industry and MOE.

22 The group finished their work in the fall
23 of 1987 at which time a draft version of the document
24 was printed and circulated for comments both within the
25 Ministry and outside the Ministry.

1 About a hundred copies were sent around,
2 including copies to interest groups that are
3 represented at the hearings here, such as Federation of
4 Ontario Naturalists and NOTOA, Ontario Federation of
5 Anglers & Hunters, MOE and others.

6 The comments were received on the draft
7 document and they were incorporated in a final version
8 where possible and it was published in November, 1988.

9 MS. BLASTORAH: Mr. Chairman, I just
10 indicate, a complete list of those invited to comment
11 on the draft document is provided in the response to
12 NOTOA Interrogatory No. 18 which I believe is one of
13 the ones we have filed. Yes, it is.

14 MR. ADAMSON: It is a previous panel's.

15 MS. BLASTORAH: Oh, I beg your pardon.
16 It's from --

17 MR. ADAMSON: Panel 7.

18 MS. BLASTORAH: Panel 8.

19 MR. ADAMSON: Panel 8.

20 MS. BLASTORAH: That was overhead No.
21 696E and the next one will be overhead No. 696F.

22 MR. ADAMSON: The materials divided into
23 these various sections here that are listed: an
24 introduction, the legislation applicable to roads,
25 mandatory standards, good practices for roads, good

1 practices for water crossings, mitigation techniques,
2 the glossary of terms and a list of references.

3 And while I go through the document in a
4 few minutes, I will explain the difference between
5 these different sections.

6 The guidelines were published last fall
7 and under cover of a Deputy Minister's letter they were
8 distributed to those affected by its contents; again,
9 the forest industry, the various ministry, districts
10 and regions and other parties.

11 To date about 3,000 copies have been sent
12 to the field and the effective date of the guidelines
13 is April 1st, 1989. So this is our first construction
14 season in which the guidelines will be used.

15 During March, April and May of this year
16 there were some introductory training sessions held
17 across the province and at these over 300 Ministry and
18 forest industry staff attended. The training sessions
19 concentrated on explaining why there were new standards
20 being put in place, how they were developed, and what
21 must be done to comply with them.

22 This training, we feel, contributes to
23 knowledge and information needed by road builders and
24 also by those doing compliance monitoring to ensure
25 good standards are met.

1 MS. BLASTORAH: Q. Mr. Adamson, you
2 indicated that the training concentrates on why the new
3 standards will apply and how they were developed. Why
4 is that the case?

5 MR. ADAMSON: A. I believe that people
6 who have been doing the job for many years, if you all
7 of a sudden impose different standards on them, have a
8 right to know why and it would improve understanding of
9 what is behind the guidelines.

10 Q. And do you think that will assist in
11 their implementation?

12 A. Oh certainly, yes.

13 Q. Thank you. Would you please review
14 some of the highlights of the Environmental Access --
15 or Environmental Guidelines for Access Roads and Water
16 Crossings, in particular, to give the Board some idea
17 of how it is intended to be used?

18 A. Before I start I have some extra
19 copies here if anyone would like copies.

20 Q. I believe the Board just had one copy
21 provided so I will provide -- Oh, I'm sorry, I already
22 provided --

23 THE CHAIRMAN: I think we all have copies
24 of that document.

25 MS. BLASTORAH: Perhaps if there is

1 anyone else in the room--

2 MR. ADAMSON: Anyone else?

3 MS. BLASTORAH: --they can just indicate
4 to Mr. Freidin.

5 MR. ADAMSON: There is copies on the side
6 table over here.

7 Okay. I would like to begin going
8 through the document by asking you to turn to page 4-5.
9 This is the where the purpose and the use of the
10 guidelines are explained.

11 There wasn't a policy statement issued
12 with the document, rather its intended use and its
13 application are explained right in the text itself.
14 There is a brief introduction explaining why guidelines
15 were needed and why they must be followed.

16 Section 2.2 explains that it applies to
17 all roads including tertiary roads. The reason for
18 that is because the potential negative effects of a
19 poorly built water crossing can occur on any standard
20 of road, any geometric standard of road. A poorly
21 built water crossing on a winter road that is only
22 there for a few months can be quite significant. So it
23 applies on all roads.

24 In using the manual, it's intended that
25 prescriptions for site-specific concerns can be

1 prepared from the information that is contained in the
2 booklet. Good practices or mitigation techniques can
3 be made mandatory conditions of approval, as Mr.
4 Tenaglia explained. This is explained in the bottom
5 paragraph on page 5, the last paragraph where it says:

6 "In situations where mandatory standards
7 are inadequate to protect fishery habitat
8 or water quality or other values.
9 appropriate good practice and mitigation
10 techniques must be selected and used to
11 ensure legislative standards and
12 requirements are met."

13 So that is the introduction to the
14 document.

15 Page 9, 10 and 11 is the mandatory
16 standards. These are standards that were developed
17 that must be followed in all circumstances. They are a
18 commitment to satisfactory environmental protection
19 where the potential for harm exists the most. They
20 have been selected to meet environmental objectives and
21 a cost -- practical cost effective way during our road
22 and water crossing construction, maintenance and
23 abandonment.

24 And an example of a mandatory standard I
25 would like to refer to is on page 10 below the

1 photograph. In the right-hand column, the fifth bullet
2 point down, it says:

3 "Appropriate erosion control and/or
4 sedimentation control measures are to be
5 undertaken to protect water quality."

6 So this is a mandatory requirement. It's
7 also an end result performance standard. The method to
8 be followed in each case to comply with the standard
9 will be different and it will be tailored to suit the
10 site and it will be tailored to suit the availability
11 of resources, for example, equipment, materials that
12 are available and the skills of the workers.

13 So what we are after is erosion control.
14 How they get it, they would use the other sections of
15 the document as information. So I won't go through all
16 the mandatory standards but these are taken very
17 seriously and will be monitored very closely.

18 Pages 13 through 36, it's a total of 20
19 pages, are good practices for roads and water crossings
20 that should be followed if possible and if appropriate
21 and, as I mentioned, these can be made mandatory in
22 specific instances where needed for a particular site.

23 Many of the good practices document the
24 way things are done already. However, by recording
25 them it serves as a reminder and also it will serve as

1 a training aid for staff who are not so familiar with
2 access road details.

3 MR. MARTEL: Can you tell me how someone
4 would know that a specific thing was made mandatory?

5 MR. ADAMSON: It would be included in the
6 approval of the work permit -- multi-purpose work
7 permit.

8 MR. MARTEL: And it would designate where
9 it came from?

10 MR. ADAMSON: Yes. they would take the
11 phrase out of here and put it right on the -- as a
12 condition of approval on the permit.

13 MR. MARTEL: Thank you.

14 MR. ADAMSON: The good practices convey
15 the messages that I mentioned earlier not verbatim but
16 through what is said.

17 For example, good practices are just
18 common sense. Good engineering equals good
19 environmental protection. So many of the standards, if
20 you read them, you will say: Gee, that is just common
21 sense, anyone would know that, but still they are
22 listed anyway.

23 The next section I would like to
24 highlight is on page 37. This is the introduction to
25 what we call Section 7. It provides technical

1 information about mitigation techniques and how they
2 should be used.

3 The first part of this section on 38, 39
4 and 40 give a little bit of Engineering 101 on the
5 causes and design of erosion and sediment control
6 measures. Now, we put this in so that the readers
7 could understand the processes involved and encourage
8 them to be creative and use their own initiative to
9 develop effective treatments suited to the specific
10 circumstances they are dealing with.

11 Now, although some erosion control
12 measures can be anticipated early or the requirement
13 for measures such as around the inlet to a culvert,
14 many problems don't appear until the time of
15 construction.

16 For example, a ditch line erosion problem
17 may not appear until they actually dig the ditch and
18 the field person responsible must be equipped to
19 respond to that erosion problem. And it's through an
20 understanding of erosion processes and how control
21 mechanisms work, together with the mitigation
22 techniques, we are hoping that that individual has what
23 is needed in the field to take action.

24 Later in -- beyond the little bit of
25 theory that is presented there are several mitigation

1 techniques that are provided in some detail. For
2 example, erosion control using rip rap, erosion control
3 using slope modification. The information is provided
4 in a consistent format and I would like to highlight
5 that format for one example here, the one on page 49.

6 It's called erosion control using brush
7 barriers and it's a technique using slash debris
8 material to reduce the amount of erosion and also to
9 provide a medium that will trap sediment in the flowing
10 water.

11 The location section answered a question
12 where would it be used. The function explains what the
13 particular treatment does, how it works. There is
14 design and construction information given there to say
15 what it is and how it built, and how do we implement
16 this technique.

17 Disadvantages are listed, since some
18 treatments may be more suited than others for a
19 particular site. We try to give an approximate cost of
20 each treatment, and also there were some sketches
21 provided to give the reader an idea of what it might
22 look like, a little better understanding.

23 So these are the erosion and sediment
24 control techniques that are available. It doesn't mean
25 these are the only techniques that one could use. And

1 later in my slide presentation I will show where some
2 people use their own initiative to come up with
3 techniques that aren't in the book but they are just as
4 effective.

5 On page 54 and 55, we have included some
6 technical details about designing for the development
7 of spawning habitat for fish, and also there is
8 technical information about designing for fish
9 migration to culverts, for example.

10 And on page 62, it is the next page I
11 would like to mention, this is the list of reference
12 material and many of these documents were used in
13 preparing the guidelines, and also included in here is
14 recommended sources of further information for staff
15 who want to design -- who want to learn more about the
16 subjects covered.

17 For example, in the area of fisheries
18 habitat, fish migration problems or development of
19 spawning areas, there are reference sources in here
20 that district fisheries biologists could obtain a copy
21 of to get more technical information.

22 The last page in the book is a fold-out
23 sketch and we prepared this sort of composite view to
24 show how the various mitigation techniques could be
25 incorporated.

1 It is fine to describe each one
2 individually, this sketch shows how they could all be
3 used at one location. We believe the guidelines will
4 establish standards and they will also provide
5 technical information that will lead to better built
6 access roads and water crossings.

7 So that's the booklet, and I should also
8 mention throughout you will see lots of examples of
9 photographs of good practices, poor practices, and
10 sketches to help in the understanding.

11 Q. Mr. Adamson, there has been some
12 question raised in the interrogatories about how the
13 Ministry intends to ensure compliance with these
14 guidelines which are Exhibit 638. Can you please
15 explain how the Ministry intends to ensure that?

16 A. Okay. The commitment to follow the
17 guidelines is contained in the Timber Class EA on page
18 190, as I mentioned. That commitment preceded the
19 development of the booklet.

20 The commitment is also stated on page 5
21 of the guidelines themselves, and I would like to read
22 out what it says here. This is under the Section 2.2
23 where it is called: Application of the Manual, and in
24 the second paragraph you will see:

25 "It is a requirement of the Class EA

1 that this manual be followed for road
2 access activities undertaken as part of
3 timber management. The Ministry of
4 Natural Resources will be responsible for
5 monitoring compliance of the private
6 sector, as well as its own staff with
7 these guidelines. And, where necessary,
8 the Ministry of Natural Resources or the
9 Ministry of the Environment will
10 undertake enforcement relating to the
11 statutes under their administration."

12 In terms of how the compliance is carried
13 out -- compliance monitoring is carried out, it will be
14 through administration of agreements and also through
15 area inspections which will be described in Panel 16.

16 The initial inspection by district staff
17 could lead to more detailed examination by district or
18 regional specialists, and this happens frequently.
19 Quite often I get called to look at the problem areas
20 and to determine what is the problem, what should be
21 done to correct it.

22 THE CHAIRMAN: Ms. Blastorah, where it
23 says:

24 "It is a requirement of the Class
25 Environmental Assessment for timber

1 management in Ontario that this manual be
2 followed..."

3 By that do you mean that as part of the
4 Ministry's application, a suggested condition of
5 approval will be mandatory compliance with these
6 guidelines?

7 MS. BLASTORAH: Well, Mr. Chairman, I
8 think that parts of the guidelines are mandatory
9 standards and I think that -- could I have just one
10 moment.

11 ---Discussion off the record

12 MS. BLASTORAH: Mr. Chairman, if I could,
13 I would like to defer that question until tomorrow. We
14 will be filing our terms and conditions at that time
15 and I would like to address it in the context of filing
16 those terms and conditions, if I may.

17 THE CHAIRMAN: Okay. I was just curious
18 with the wording. The wording almost implies that
19 there has been an approved Class Environmental
20 Assessment, and I take it that what is before us
21 obviously is an application.

22 Should the application be approved and
23 should there be a condition of approval that specifies
24 that these guidelines must be applied and adhered to,
25 that would make some -- that would sort of complete the

1 sense of that sentence; would it not?

2 MS. BLASTORAH: Yes, it certainly would.

3 THE CHAIRMAN: Otherwise there is no
4 Class Environmental Assessment other than an
5 application before us at this point.

6 MS. BLASTORAH: If that was your concern,
7 Mr. Chairman, it certainly -- the wording may suggest
8 that to some. That certainly wasn't the intent of that
9 sentence.

10 MR. ADAMSON: As the author of those
11 words, the link was made, it is in the Class EA
12 Document itself--

13 THE CHAIRMAN: Which is an application at
14 this point.

15 MR. ADAMSON: --which is an application,
16 that's correct.

17 MS. BLASTORAH: Yes.

18 Q. And I think -- am I correct, Mr.
19 Adamson, the intent was to fulfill the requirement you
20 have already noted at page 190, that a guideline of
21 this type be developed?

22 MR. ADAMSON: A. Yes.

23 Q. Thank you.

24 THE CHAIRMAN: Okay. I guess it is a
25 timing problem more than anything.

1 MR. ADAMSON: To carry on about
2 compliance monitoring. I mentioned that inspections
3 will be carried out and if problems are observed
4 specialists can be called in to look into it.

5 The action that might be taken at a
6 specific site is specific to that site, but it could
7 include things like stopping the construction
8 operations, the authority is now in place in the
9 amended Public Lands Act. It could ask to have the
10 deficiency corrected. For example, if it needs rip rap
11 material for erosion protection or if the culvert pipe
12 is too small, the Ministry can ask and insist that that
13 be provided.

14 Another option could include remedial
15 work to rehabilitate the site and mitigate the harm
16 done. For example, if a spawning area is silted in
17 with sediment, the Ministry could ask that new spawning
18 areas be developed. And another option that's
19 available to conduct an investigation with a view to
20 laying charges under legislation administered by the
21 Ministry.

22 MS. BLASTORAH: Q. Mr. Adamson, just on
23 that point, you indicated that the Ministry could ask
24 that a new spawning area be developed. Could they
25 require that that be done?

1 MR. ADAMSON: A. Yes.

2 Q. Thank you.

3 A. The legislation that could be used by
4 the Ministry includes the amended Public Land Act,
5 which we all feel will be the main vehicle now; there
6 is also the Fisheries Act, the Lakes and Rivers
7 Improvement Act and the Crown Timber Act.

8 The exact procedures that would be
9 followed in enforcement are very site-specific and they
10 would relate to the particular statute that was being
11 used. And the Ministry expects that enforcement is a
12 means of obtaining compliance with the document will
13 only be necessary on an infrequent basis.

14 Q. Why do you say that, that it will
15 only be necessary on an infrequent basis?

16 A. Well, I believe -- and to development
17 and training, I think the way to change peoples'
18 attitudes is through education and understanding and
19 cooperation, and certainly the forest industry
20 participated in developing the guidelines, they are
21 very cooperative, and through the training sessions and
22 visits to the bush, I feel that there is a good
23 acceptance of the document amongst bush workers.

24 And, furthermore, I think our Ministry
25 field staff are taking the message on a case-by-case

1 basis as well. They go out, they look at a water
2 crossing and they will size it up and say: Okay, at
3 this crossing these are the things we have got to do to
4 make sure it is done right.

5 Q. The Ministry's recently -- or recent
6 Final Report on Crown Land Bridge Management, which has
7 been filed as Exhibit 686, is a document you referred
8 to earlier.

9 Could you explain the background of the
10 development of that document and the policies and
11 guidelines that affect bridges on roads for timber
12 management purposes?

13 MS. BLASTORAH: And I would just indicate
14 to the Board, this was an issue that was raised by a
15 number of the parties in their interrogatories,
16 specifically MOE No. 18, NOTOA, 11, NOTOA 24 and NOTOA
17 38.

18 MR. ADAMSON: Okay. As I mentioned
19 earlier, this report was just released last month and
20 although we would have liked to include it in the
21 direct evidence, the written material package, it
22 wasn't available at the time it was prepared.

23 So I would like to go through a brief
24 slide presentation to explain the background of bridges
25 in Ontario and also what the policy is aiming at

1 implementing for bridges that are built in the future.

2 MS. BLASTORAH: Mr. Chairman, we do have
3 hard copies of these slides to file with the Board and
4 we did have a slide list prepared and, unfortunately,
5 somehow in bringing all our documents over here we seem
6 to have left it, so perhaps if you would like to
7 reserve an exhibit number for that now we will provide
8 copies to the Board and the parties.

9 MR. ADAMSON: I have one copy.

10 MS. BLASTORAH: Okay.

11 THE CHAIRMAN: Okay. Exhibit 697.

12 MS. BLASTORAH: I have one copy that I
13 could provide to the Board, if that would be of
14 assistance.

15 THE CHAIRMAN: Is 697A to what, do you
16 know?

17 MS. BLASTORAH: Is this for the
18 photographs or the...

19 THE CHAIRMAN: Is it the hard copy
20 explaining the slides?

21 MS. BLASTORAH: Okay. Well, I have two
22 exhibits to be filed. One is the hard copy of the
23 photographs.

24 THE CHAIRMAN: Oh okay, sorry.

25 MS. BLASTORAH: Perhaps we could make

1 that Exhibit 697.

2 THE CHAIRMAN: Okay. And then Exhibit
3 698...

4 MS. BLASTORAH: Will be the photo list
5 which is four pages.

6 THE CHAIRMAN: A to D then?

7 MS. BLASTORAH: Yes. Although I don't
8 know that it would be really necessary to refer to
9 that. It's more for the assistance of the parties I
10 think.

11 THE CHAIRMAN: All right.

12 MS. BLASTORAH: And I might just point
13 out the reason we will be providing this photo list,
14 and correct me if I am wrong, Mr. Adamson, is that most
15 of these slides are not contained in the statement of
16 evidence.

17 Q. Am I correct in that?

18 MR. ADAMSON: A. That's correct, yes.

19 MS. BLASTORAH: (handed)

20 THE CHAIRMAN: Thank you.

21 MS. BLASTORAH: Mr. Chairman, perhaps you
22 might just like to mark your copy and the reporters
23 could mark Exhibit 697 as hard copy of photographs
24 relating to bridges because we are going to have
25 several separate slide shows and we will be filing the

1 photographs separately.

2 THE CHAIRMAN: Okay.

3 MS. BLASTORAH: And, Mr. Chairman, maybe
4 I will just indicate too that we will be making
5 available to the parties photocopies of these
6 photographs as well. Unfortunately, we were not able
7 to get that prepared for today, we just received the
8 photographs this morning.

9 THE CHAIRMAN: All right.

10 ---EXHIBIT NO. 697: Hard copy of photographs relating
11 to bridges.

12 ---EXHIBIT NO. 698: Four-page photo list to be
13 referred to by Mr. Adamson in
evidence-in-chief.

14 MR. ADAMSON: This is a typical wooden
15 bridge on an access road. And before I start, maybe I
16 would like to point out some of the components that I
17 may refer to later.

18 On either side of the river are what are
19 called abutments or cribs, and they are built on the
20 soil and they support main beams that go across here
21 often called stringers or beams. See, that's a log
22 beam there spanning between the two cribs. (indicating)

23 And then on top of the beam or the
24 stringer is a cross deck, and in this particular bridge
25 the deck is made of smaller diameter logs, and then

1 this material here is the curb timber to restrain
2 vehicles and to mark the edge of the bridge.
3 (indicating)

4 MS. BLASTORAH: Q. And that's photograph
5 No. 1 on the photo list, Mr. Adamson?

6 MR. ADAMSON: A. Yes.

7 Q. And perhaps I would just indicate
8 that we will be going through the photos in order as
9 they are shown on the photo list, and maybe you could
10 just indicate every time you put up a new slide, Mr.
11 Adamson, what the next number is.

12 A. All right.

13 Q. Thank you.

14 THE CHAIRMAN: Mr. Adamson, I realize
15 that there is liability problems that may be critical,
16 but in a bridge like this, is there any indication
17 given anywhere in signing as to load limits or weight
18 limits or anything to indicate to a person who wants to
19 use it that they may end up in the river?

20 MR. ADAMSON: There will be now. That's
21 why we have a bridge management policy and guidelines.

22 At the time this -- this bridge here is
23 old and I struggled with the same issue and came up
24 with that wording right there which doesn't really say
25 a lot, but now we have a little firmer direction.

1 MS. BLASTORAH: Q. And, Mr. Adamson, in
2 the case of older bridges that are in existence now,
3 where a problem was identified as to perhaps
4 deterioration of the structure, would it sometimes be
5 the case that those bridges would be signed as to
6 bearing weights or...

7 A. Yes, certainly, yes. There is a
8 variety of signs that are recommended, including a load
9 rating.

10 So this is a typical wooden bridge. Many
11 of them were built after World War II for logging
12 operations when access roads replaced the driving of
13 wood down rivers. The bridges were economical because
14 they were built using untreated logs from the nearby
15 forest.

16 As we all know, as wood decays -- or wood
17 decays if it is untreated. With time it loses its
18 strength and it may start to fall down. You can see
19 right there where I am pointing is a log stringer that
20 has fallen down into the river (indicating). This is
21 slide No. 2.

22 In the last 20 years there has been a
23 substantial increase in the weight of trucks crossing
24 bridges on access roads. A logging truck like this one
25 can weigh 60,000 kilograms. So the combination of

1 deteriorating wooden structures and heavier trucks has
2 led to a few instances of bridges collapsing on access
3 roads.

4 Q. And that's slide No. 3?

5 A. Slide No. 3, yes. This particular
6 bridge here is over Trewartha Creek near Upsala and it
7 failed in 1982 under a loaded logging truck. And the
8 bridge is way down here in the bottom. It used to be
9 up here at the top, the log bridge, it fell down under
10 the weight (indicating).

11 The channel was filled in by the logging
12 company to continue access through the winter and a new
13 structure was put in consisting of two large culverts
14 to replace this old bridge.

15 Q. Mr. Adamson, on that slide when you
16 say the channel was filled in, would that block the
17 water passage along there?

18 A. Yes. You can see there is no area
19 there for the free movement of water back and forth.

20 Q. And would that be left like that?

21 A. No, definitely not. And, as I
22 mentioned, it was dug out and replaced by two culverts.

23 Q. When would that have been done, do
24 you know?

25 A. I'm not sure when it was done. It

1 would have had to be done very soon to restore the
2 waterflow in the creek.

3 Q. Thank you.

4 A. I think the environmental
5 implications of premature bridge failure such as this
6 are pretty obvious. They include debris, public safety
7 hazard and sediment entering the waterway.

8 Q. That's slide No. 4, Mr. Adamson?

9 A. Four, yes.

10 Q. Could you indicate at the outset what
11 the slide number is. I think it will be a little
12 easier to follow in the transcript if you do it that
13 way.

14 A. Okay. Slide No. 5. Bridge failures
15 are not just limited to short-span log bridges. This
16 120-foot long steel bridge over the Wenebegon River
17 collapsed under the weight of a fully loaded logging
18 truck in January 1987. See the bridge used to be
19 spanning at this elevation and it broke into two parts,
20 here and here (indicating).

21 The logging truck made it off the bridge
22 but the pick-up following behind just barely stopped in
23 time. We are not aware of any personal injuries
24 resulting from failure of bridges on Crown land. I
25 haven't heard of any.

1 These events led us to question current
2 practices and standards from employee and public safety
3 on bridges on access roads, and the result of this
4 review and questioning has been development and
5 approval of a policy and guidelines for the management
6 of bridges, and they are contained in the Crown Land
7 Bridge Management Report, which is Exhibit 686.

8 This is slide No. 6.

9 Q. Mr. Adamson, on that last slide, do
10 you have any idea how old that bridge was at the time
11 of its collapse?

12 A. I believe it was installed in 1980.

13 Q. Thank you.

14 A. Slide No. 6 contains a statement of
15 new standards for bridges, engineering standards.
16 These were developed by the Ministry in consultation
17 with the forest industry. And for new bridges, the
18 policy requires that design and construction meet
19 engineering standards, that means designing for the
20 truck loads and designing for the strengths of the
21 materials that are used.

22 It requires that long-lasting materials
23 be used in long-term bridges, and we settled on a
24 10-cut off. So that means that if a bridge is needed
25 for more than 10 years, it has to be built of steel,

1 concrete or treated timber, pressure-treated timber.

2 Untreated wood can be used for short-term
3 bridges. So the log bridge can continue to be used as
4 long as it is not left in place for more than 10 years.
5 And to ensure that these requirements are met, all
6 bridge proposals must now be reviewed by the regional
7 engineer. That --

8 Q. Mr. -- sorry. Go ahead, Mr. Adamson.

9 A. That review process, as indicated by
10 Mr. Mr. Tenaglia, the application to build a bridge
11 would come in with the application for a permit and any
12 that had a bridge proposed would come to the regional
13 engineer and that's when the review would occur.

14 MS. BLASTORAH: And I would just
15 indicate, Mr. Chairman, that the text slides included
16 in this presentation are part of Exhibit 696, this one
17 being 696G.

18 THE CHAIRMAN: When you say reviewed by
19 the regional engineer, does that mean he stamps them
20 professionally? Does he put on a certification from
21 the Association of Professional Engineers?

22 MR. ADAMSON: If you will wait a little
23 further in the presentation, what we have done is we
24 have made standard drawings available to the industry
25 with the engineer's stamp on it, my stamp is on it.

1 So if they follow those standard drawings
2 they will comply with this requirement. If they want
3 to deviate from those standard drawings, they have to
4 hire an engineer.

5 MS. BLASTORAH: Q. And if that were the
6 case, Mr. Adamson, would it be normal practice for the
7 engineer that they hired to stamp the drawings?

8 MR. ADAMSON: A. That's correct, yes.

9 Q. Thank you.

10 A. No. 7 is another text slide that
11 summarizes some of the planning implications of the new
12 bridge policy. Obviously we want to know whether the
13 bridge is a short term or long term and that would be
14 defined in the use management strategy.

15 So if the use management strategy says
16 the road is needed for 15 years, then that triggers a
17 decision in our review that it has to be permanent
18 materials.

19 MS. BLASTORAH: Mr. Chairman, this slide
20 is Exhibit 696H.

21 MR. ADAMSON: The condition of bridges
22 must be considered in resource management planning, and
23 what that means is during preparation of a timber
24 management plan, if there are any deficient bridges on
25 the route leading to areas to be cut, something would

1 have to be included in the plan to bring them up to
2 standard.

3 And the last area, there are guidelines
4 provided in the document for the management of existing
5 bridges. We have quite a backlog of old bridges that
6 are going to -- have in the past given us problems and
7 they will continue giving us problem for many years to
8 come. We estimate there is about 1,500 bridges in the
9 province and, of those, guidelines have been developed
10 to deal with them.

11 The Ministry has begun a program of
12 inspecting and evaluating the condition of bridges on
13 Crown land, including those on company access roads.

14 And this is slide No. 8. With the
15 information from the inspections, management decisions
16 can be made, where necessary, for public safety or
17 environmental protection. So we have begun a program
18 to go out and determine -- inventory the bridges,
19 inspect them, evaluate their condition and, based on
20 that information, decisions can be made.

21 MS. BLASTORAH: Q. Mr. Adamson, the
22 inspector that's shown here, do inspectors of this type
23 receive any guidelines or training as to how the
24 inspections are to be carried out?

25 MR. ADAMSON: A. The inspection is all

1 done by engineering personnel and we can do it
2 ourselves, like my engineering section, or in this
3 example it is a consultant engineer who was hired to do
4 the inspection. So that individual is a technician
5 working for an engineer, but he is qualified to do
6 bridge inspections.

7 Q. Thank you.

8 A. Once the inspection is complete, the
9 report sets out guidelines on different management
10 options.

11 MS. BLASTORAH: This slide is Exhibit
12 696I, Mr. Chairman.

13 MR. ADAMSON: Slide No. 9. The options
14 that are available to deal with a particular situation,
15 and each one is dealt with on its own merit, its own
16 circumstances. Options that are available include no
17 actions required, post-warning signs, and the report
18 contains suggested wording for signs.

19 A decision could be made to replace or
20 upgrade the bridge, bring it up to standard; a decision
21 could be made to close the bridge to traffic; or,
22 lastly, physically remove the bridge from the crossing.
23 And in making these decisions every effort will be made
24 to ensure continued safe access to Crown land unless
25 the use management strategy indicated that this wasn't

1 necessary.

2 MS. BLASTORAH: Q. When you say this
3 wasn't necessary, what do you mean by that?

4 MR. ADAMSON: A. It didn't contemplate
5 any further use on the road.

6 Q. Thank you.

7 A. This is slide No. 10. In the last
8 year in the two regions that I work in, the
9 northcentral region and northwestern region, a total of
10 50 old bridges were dealt with, and by dealt with again
11 I mean they were removed or upgraded or replaced.
12 About half of these were done by the forest industry,
13 about half were done by the Ministry.

14 This photo shows the Black Sturgeon River
15 bridge near Thunder Bay and it shows an old untreated
16 wood bridge on the right, right over here with that
17 truck sitting on it (indicating), and the new bridge is
18 being built of pressure-treated timber, pile vents --
19 pile support in the middle, and pressure-treated timber
20 cribs, steel beams and it will have a pressure-treated
21 timber deck on it.

22 Following completion of this new bridge
23 and the road leading to it, the old bridge over here
24 was removed in the winter time and the old logs were
25 burned. (indicating)

1 Q. And I believe we had an interrogatory
2 that addressed the question of burning materials from
3 old bridges?

4 A. It asked the question, yes: Under
5 what circumstances would you burn materials.
6 Obviously, logs are suitable for burning, it's just a
7 matter: Can it be done safely and at the right time of
8 year.

9 The other interrogatory addressed special
10 measures that might be taken during dismantling to
11 prevent material flowing down the creek. And in this
12 case we did the work in the winter when there was a
13 sheet of ice on the river so that any material that
14 fell down we could pick it up off the ice.

15 THE CHAIRMAN: Would you ever now burn
16 pressure-treated wood?

17 MR. ADAMSON: That's a good question. My
18 understanding is that we can, as long as it doesn't
19 have any effect on people in the area.

20 The railway certainly burns creosoted
21 ties and in talking to Environment, that was the answer
22 I got: As long as there is no people downwind that
23 might be affected. Hopefully we won't have to burn
24 pressure-treated wood, it will stay there a long time.

25 When it is mutually suitable, the

1 Ministry has made its engineering expertise available
2 to the forest industry.

3 For example, the Bright Sands River
4 bridge shown in this slide was built by Canadian
5 Pacific Forest Products using a design provided by our
6 office. This is slide No. 11.

7 MS. BLASTORAH: And, Mr. Chairman, I
8 would just indicate the interrogatory I referred to
9 that dealt with burning of materials from old bridges
10 was NOTOA Interrogatory No. 23.

11 THE CHAIRMAN: Thank you.

12 MS. BLASTORAH: Q. This bridge that you
13 are showing in photo number -- I believe this is No.
14 11, Mr. Adamson?

15 MR. ADAMSON: A. Eleven, yes.

16 Q. Which is the Bright Sands bridge?

17 A. Yes.

18 Q. Was that one of the standard designs
19 that you referred to earlier?

20 A. This pre-dates the standard designs,
21 but it was one of our designs that was used and, you
22 know, satisfactory construction of this bridge led to
23 projection of that same idea on a more formal basis.

24 Q. Thank you.

25 A. To assist the forest industry in

1 complying with the policy, the Ministry engineers have
2 prepared standard drawings for bridges. The drawings
3 here are somewhat faded.

4 Q. This is slide No. 12?

5 A. Slide No. 12, sorry. These drawings
6 and designs follow current engineering codes of
7 practice such as those shown in the slides. They have
8 been sealed by professional engineers and they have
9 also been reviewed by Ministry of Transportation of
10 Ontario, Structural Office.

11 Q. Mr. Adamson, for the record, maybe
12 you could just read out the names of the documents that
13 are indicated in the slide there?

14 A. These are examples of documents we
15 use in engineering design. There is a Handbook of
16 Steel Construction which deals with the strength of the
17 steel materials and section sizes, beam sizes.

18 There is a Handboook of Steel Drainage
19 and Highway Construction Products which really doesn't
20 deal with bridges but deals with culverts.

21 And there's the Timber Design Manual
22 which again addresses the structural capacity of timber
23 members that are used in design. But these are just
24 examples, there are other codes that are used.

25 No. 13 slide for temporary bridges. The

1 drawings that I showed were for long-term bridges. The
2 temporary bridges, the policy can be met by adhering to
3 the guidelines in a booklet called the Log Bridge
4 Construction Handbook.

5 MS. BLASTORAH: Mr. Chairman, I would
6 like to file a copy of that. I have one copy to mark
7 as an exhibit and a copy has been placed in the reading
8 room last week.

9 THE CHAIRMAN: All right. Exhibit 699.

10 MS. BLASTORAH: And for the record the
11 title is: Log Bridge Construction Handbook, 1980 by
12 the Forest Engineering Research Institute of Canada.
13 The acronym is FERIC, F-E-R-I-C.

14 ---EXHIBIT NO. 699: Log Bridge Construction Handbook,
15 1980 by FERIC.

16 MR. ADAMSON: My understanding is that
17 FERIC is an institute that is funded by the forest
18 industry in Canada and also by the various ministries
19 responsible for forestry including the Ministry of
20 Natural Resources, and they undertake engineering
21 research related to timber operations.

22 And this particular booklet was developed
23 for the British Columbia forestry industry to give them
24 guidance on building log bridges.

25 Now, what we have done, because their

1 logs start about 20-inch diameter and go up, we retain
2 FERIC to develop a supplement to their book for Ontario
3 conditions. It contains design charts for logs that
4 are found in Ontario, both the sizes of logs that we
5 have here and the species of timber, and those design
6 charts are based on the design loads that we have
7 selected for our standards, the truck loading in other
8 words.

9 So the new policy can be met for most
10 bridges by using the standard drawings and the Log
11 Bridge Handbook, the charts, without the need for the
12 company to hire their own engineers.

13 Obviously for longer span bridges
14 individual custom designs will be needed or if there is
15 particular problems with foundations that require
16 piling or something, a custom made design would have to
17 be prepared.

18 So I think in summary of this little
19 slide presentation I would like to -- what the main
20 messages I wanted to get across were that we identified
21 that there was a problem with the design, construction
22 and approval practices for bridges and the MNR
23 identified that problem.

24 We examined it and we established policy
25 and direction to manage it, and we cooperated with the

1 forest industry during development of the standards and
2 the report and, again, we tried to ensure that the
3 objectives of both the Ministry and the forest industry
4 could be met in a practical way and I believe now, with
5 these tools in place, that with good planning, design,
6 approval of construction, bridges that will be built in
7 the future will be safe structures with materials that
8 are suited for the planned life of the bridge.

9 MS. BLASTORAH: Q. Mr. Adamson, just
10 before we leave this particular topic, you indicated
11 that a supplement to the -- I believe you indicated a
12 supplement to the Log Bridge Construction Handbook,
13 which has been marked as Exhibit 699, was prepared.

14 Is that available to people in the
15 industry?

16 A. Yes, that supplement is contained in
17 the report. It's one of the chapters of the report.

18 Q. And that report is the Crown Land
19 Bridge Management Final Report which is Exhibit 6 86?

20 A. That's correct, yes.

21 Q. Thank you.

22 MS. BLASTORAH: Mr. Chairman, perhaps you
23 could give me an indication of how late you were
24 intending to sit today?

25 THE CHAIRMAN: Well, you give us an

1 indication of how your examination is going?

2 We are hoping, probably going beyond
3 that, intending to finish this panel in direct by some
4 time late Wednesday. And so we are willing to
5 accommodate that by sitting later, if necessary, and
6 starting earlier so that we can all leave by late
7 Wednesday afternoon.

8 MS. BLASTORAH: Well, I don't think that
9 will be any problem, Mr. Chairman. I was about to
10 suggest that we continue with Mr. Adamson for a little
11 while longer today and I think that it may not even be
12 necessary to sit particularly late tomorrow night. I
13 don't think we will have any problem finishing at a
14 reasonable time on Wednesday, but I will have a better
15 sense of that tomorrow.

16 THE CHAIRMAN: Okay. Well, in that
17 regard, if we could take a short break for 15 minutes,
18 there is a phone call that I have to make at 4:30, then
19 we could come back and continue on with Mr. Adamson for
20 a little while until you feel it's appropriate to stop.

21 MS. BLASTORAH: Okay. I think that there
22 is probably one more segment of his evidence that we
23 could finish today and, at a reasonably convenient
24 breaking point. Is that fair, Mr. Adamson?

25 MR. ADAMSON: Mm-hmm.

1 THE CHAIRMAN: Okay. So why don't we
2 come back in 15 minutes.

3 MS. BLASTORAH: Thank you, Mr. Chairman.

4 THE CHAIRMAN: Thank you.

5 ---Recess taken at 4:20 p.m.

6 ---On resuming at 4: 45 p.m.

7 THE CHAIRMAN: Thank you. Be seated.

8 MS. BLASTORAH: Mr. Chairman, I have
9 copies of the photo list now, so I think it would be
10 helpful if I hand that out.

11 It's Exhibit 698 and it is a four-page
12 list -- I believe we marked it Exhibit 698 A to D, and
13 I would point out that's a little important because the
14 photos begin at 1 on each page. Each page deals with a
15 separate slide presentation.

16 THE CHAIRMAN: Okay.

17 MS. BLASTORAH: So I will distribute
18 those to the parties and the Board. (handed)

19 And, Mr. Chairman, I also have the copies
20 of policy -- or Strategy No. LM-90503 which I believe
21 we marked during Mr. Tenaglia's evidence as Exhibit
22 685.

23 So I will provide those copies to the
24 Board and the parties as well. (handed)

25 THE CHAIRMAN: Thank you.

1 MS. BLASTORAH: Q. Mr. Adamson, you
2 mentioned, or I believe Mr. Tenaglia perhaps mentioned,
3 terrain difficulty as an issue. Can topographical
4 features affect road location?

5 MR. ADAMSON: A. Yes, topographical
6 features or land forms directly influence the location
7 of road corridors and alignments within the corridors.
8 And I would just like to say a few words on that.

9 It's due to recognition of land forms on
10 the air photos that expected road building conditions
11 can be predicted. Some land forms are more suitable
12 for building roads than others and favourable land
13 forms such as sand outwashed planes or gravel ridges
14 will lead to lower costs and better built road, and
15 other topographical features are to be avoided if
16 possible, such as bedrock areas, deep organic deposits,
17 erodible soils.

18 So we try to recognize these on the air
19 photos and try to predict what we can expect will occur
20 on the route of that road.

21 And I would like to illustrate that with
22 a sketch, an overhead sketch. This is part of Exhibit
23 696. It's also contained in the evidence as Figure 3.2
24 and I will put it on.

25 MS. BLASTORAH: And that is Exhibit 696J

1 and it's contained in the statement of evidence at page
2 129.

3 MR. ADAMSON: This sketch is just a
4 hypothetical example to show different land forms that
5 may be recognized in the area.

6 The dark line there (indicating) would be
7 the road alignment that is built through these land
8 forms. You can see, starting from the bottom, it
9 passes between two lakes and then it takes a swing to
10 the left to avoid that rock ridge, but not too far to
11 the left or it might go into that organic deposit,
12 the swamp, and then the alignment passes through the
13 edge of a gravel deposit which is a favourable road
14 building terrain and it's quite likely that there may
15 be a borrow pit developed in that gravel deposit.

16 A good supply of gravel is necessary to
17 build good roads. So in locating roads, the person
18 doing the locating is always looking for good granular
19 materials and gravel to build with.

20 THE CHAIRMAN: Why would you not want to
21 build on bedrock if the bedrock was fairly level?

22 MR. ADAMSON: If it was dead level it
23 would be fine, but usually it's up and down and
24 requires very expensive rock cuts to make a
25 satisfactory road. Also there is a problem in getting

1 good drainage, it's very difficult to get ditches in
2 bedrock.

3 MS. BLASTORAH: Q. Are there other
4 factors considered in the determination of road
5 location other than terrain?

6 MR. ADAMSON: A. Yes. The other factors
7 are the need, where the wood is located for harvesting.
8 Obviously there is no sense in building a road to where
9 it's not needed. Topographical features, as I
10 mentioned, are the engineering characteristics.

11 Another factor would be the geometric
12 standard of the road. A high standard road, a high
13 speed road would be located perhaps in one location
14 here on this sketch, a low standard secondary road,
15 geometric standard, could be more winding, could
16 following the hills more and have more curves.

17 And the last factor that would influence
18 where the road goes is areas of concern that are
19 identified during the planning period or even after
20 that would pose a constraint on where that road might
21 be placed.

22 Q. Mr. Adamson, you indicated that lower
23 geometric standard roads would be more winding or could
24 be more winding. Why is that?

25 A. In order to reduce the cost they

1 would follow the terrain more closely. In order to --
2 if it was a high standard road and the terrain was
3 difficult, to maintain that high standard would require
4 more cuts and fills and higher construction costs.

5 Q. Thank you. How are all of the
6 various factors that you have mentioned meshed in the
7 final decision on location?

8 A. Well, where there are no areas of
9 concern, the preferred route is the lowest cost path of
10 least resistance that will meet the timber management
11 objectives. And by path of least resistance, I mean
12 you try to follow the contours, try to minimize the
13 grading requirements. It would cross ground that
14 contained good road building materials; if possible, it
15 would have a straight alignment, as much as possible;
16 and the grades would be relatively flat. So that would
17 be good roading building country.

18 In more difficult terrain, these
19 conditions aren't always possible, so curves and hills
20 are introduced to try and reduce the costs of building
21 a straight alignment.

22 Where there are areas of concern that
23 might be affected by location of the road, then
24 alternative routes are examined and mitigation
25 techniques are examined as part of the planning process

1 and each case would be considered and decided on the
2 specific circumstances involved.

3 Where changes are made from the lowest
4 cost alignment, say as a prescription for an area of
5 concern, there will always be an increased cost to
6 build the road to move off of that lowest cost
7 alignment.

8 Q. Once the location of the road has
9 been decided, what are the construction operations
10 involved in actually building the road?

11 And I believe that that relates to an
12 interrogatory that we received from the Ministry of the
13 Environment No. 15 and also concerns raised by the
14 OFIA/OLMA in their statement of issues?

15 A. Well, I would like to put up another
16 overhead here which contains a schematic road
17 construction schedule.

18 MS. BLASTORAH: And again, Mr. Chairman,
19 this is contained in Exhibit 696 as page K -- 696K, and
20 it's contained in the statement of evidence at page
21 140.

22 MR. ADAMSON: Roads are normally
23 constructed following a sequence of operations, and
24 they are listed on the left column of this chart.

25 And included in the sequence is the

1 planning, which is the timber management planning
2 five-year plan or the annual work schedule; there is an
3 engineering component to lay out the road where it's
4 going to go, do any field surveys needed; there is
5 mobilization of equipment, clearing of the
6 right-of-way, removal of the trees from the area in
7 which the road is going to be built; grubbing or
8 stripping of the organic material to expose the mineral
9 soil for grading operations; earth grading which is
10 cutting into the earth in high areas and filling in low
11 areas to make a satisfactory profile on which the
12 vehicles can drive.

13 If it's rock terrain, then the term is
14 rock grading; that would be rock cuts, rock fills and
15 ditches. There may be swamp treatments, and I use that
16 term as special treatments that are used when we are
17 crossing organic deposits.

18 Quite often the old fashioned corduroy
19 mats are still used on access roads and we also use
20 newer technology materials, synthetic materials to
21 strengthen the natural route mat of the swamp to carry
22 the road.

23 MS. BLASTORAH: Q. Could you just
24 explain what you mean by corduroy mat?

25 MR. ADAMSON: A. A Corduroy mat is

1 the -- it's a method of laying logs underneath the road
2 to help to support the road on the organic mat. And
3 corduroy roads have been built in Canada since the
4 1600s. You don't see that technique on highways
5 though, they still use it on access roads.

6 Drainage is the operation of putting in
7 ditches and putting in cross culverts for local runoff.
8 And the last component to complete the road is the
9 gravel surface, that is high quality driving surface
10 that must support the heavy weight of the trucks.

11 Each operation generally follows a time
12 sequence. As indicated, there is some overlap of
13 course between the various components and activities
14 usually take place during the summer construction
15 season. And, in northern Ontario, that is from about
16 the first of June until about the end of October, maybe
17 mid-November.

18 Q. With regard to the timing, Mr.
19 Adamson, is this diagram or this chart that you have
20 put up intended to be a relation -- to indicate the
21 relation between these activities. And the reason I
22 ask that is I'm wondering whether engineering would
23 necessarily follow immediately after planning?

24 A. It's just a generalization.
25 Obviously if there are areas of concern there may be

1 some engineering done during the planning stage to
2 precisely define the alignment of the road to ensure it
3 can be built within the defined corridor.

4 The time frame in order of how much road
5 is normally built in a year, I suggested about five to
6 ten kilometres of road would be built in a summer
7 season working on a new road.

8 The road would be built to the geometric
9 standard as defined for it; in other words, the width,
10 the curves, the gradients that are allowed would be in
11 the geometric standards and the road is also built to
12 comply with the Environmental Guidelines for Access
13 Roads and Water Crossings.

14 Q. You indicated, Mr. Adamson, that you
15 would expect that for primary or secondary roads about
16 five to ten kilometres could be constructed during a
17 summer. Why have you given that range; does that
18 relate to the geometric standard at all?

19 A. It relates to the geometric
20 standards, it also relates to the sort of resources
21 that I have seen put out on access road construction.
22 It's possible to build more, but I think it would be
23 unusual.

24 Q. Thank you.

25 A. Where the work is contracted out to a

1 road building contractor such as a contractor that
2 would take on highway projects that occurs
3 occasionally, there would be detailed construction
4 specifications included in the contract and they would
5 be similar to the Ontario Provincial Standards
6 Specifications which are used by MTO and that type of
7 precise spec would be written where it's contracted.

8 Construction specifications of this type
9 are not normally used when the road is built in-house
10 because the Ministry and the forest industry have
11 experienced staff in road building and they wouldn't
12 necessarily need the detailed type of specifications
13 that are built in to legal contracts.

14 Q. When you say in-house, could you
15 explain what you mean by that?

16 A. In-house means that the organization
17 building the roads, say for example a Ministry
18 district, would put one of their own employees on the
19 road as a foreman in charge of the work and they would
20 rent equipment on an hourly rate and he would issue
21 instructions to the equipment operators and I would
22 term that as being in-house, all the operations under
23 direct control of the Ministry, the road builder.

24 Q. And one last question on this last
25 section of your evidence. Again, when you were talking

1 about the five to ten kilometres of average
2 construction, you indicated that could be affected by
3 the geometric standard.

4 Could that also be affected by the
5 terrain? Is that a figure or a range that would apply
6 equally across the area of the undertaking or would
7 that vary from area to area?

8 A. Oh, it's a generalization, certainly.
9 In good going terrain the road building would be much
10 faster; in difficult terrain it could be slower.

11 Q. Thank you. In their Interrogatory
12 No. 12 the Ministry of the Environment asked about the
13 sizing of water crossings. What do you mean when you
14 refer to the sizing of water crossings? What would you
15 include in that?

16 A. Water crossings are sized to pass
17 design flood events safely without washing out the road
18 and the most significant factor that affects flood
19 flows is the drainage area contributing to --
20 contributing runoff to the crossing.

21 And what we try and do is mark out the
22 drainage area on topographic maps or air photos. I
23 would like to, again, put up an overhead transparency
24 to illustrate that.

25 Q. And just a point of clarification,

1 Mr. Adamson. When you talk about sizing of water
2 crossings, would you include both bridges and culverts
3 in that?

4 A. Yes.

5 Q. Thank you.

6 MS. BLASTORAH: And again, Mr. Chairman,
7 this is included in Exhibit 696 as Exhibit 696L which
8 is shown in the statement of evidence as well, I
9 believe.

10 Q. Is that correct, Mr. Adamson?

11 MR. ADAMSON: A. Yes, that's right.
12 It's Figure 5.8 in the statement of evidence.

13 MS. BLASTORAH: I will just have to get
14 the page reference, Mr. Chairman, I don't have it in my
15 notes.

16 MR. ADAMSON: What this sketch
17 illustrates is the dotted line around the perimeter
18 follows the heighth of land and defines the watershed
19 which will contribute water to the crossing here of the
20 road. (indicating) The water crossing is shown in the
21 circle.

22 So all of the water that falls or snow
23 melt within that dotted line would all work its way to
24 the crossing where you want to cross.

25 Outside of that line, over here for

1 example (indicating), the water would go off into
2 another drainage basin not the particular creek that
3 we are crossing.

4 So by marking off what is contributing
5 the water, we use design methods of hydrology and
6 hydraulics together with field observations of the
7 crossing itself, what has historically occurred there,
8 and we try to protect flood flows and we size the
9 culvert or bridge opening to handle those flood flows.

10 MS. BLASTORAH: Q. Are there any other
11 considerations besides flood capacity taken into
12 account?

13 MR. ADAMSON: A. Yes. Other
14 considerations that go into deciding whether it's a
15 bridge or a culvert or the size would include the water
16 depth and the width; stream bed conditions, what type
17 of material is it; of course, whether access is
18 required for a short term or long term may decide; the
19 cost of the crossing, particularly in relation to the
20 wood volumes being accessed.

21 The construction schedule. For example,
22 if the road here had to be built in the winter time,
23 it's very difficult to build a culvert in the winter,
24 but a bridge can be built in the winter as well as the
25 summer.

1 If navigation was a consideration, that
2 would influence the opening size as well.

3 Q. Could navigation include canoe routes
4 or canoe usage, that sort of thing?

5 A. Yes, it could. Any vessel from a
6 canoe all the way up to houseboats. Some of our
7 crossings we do size for houseboats and that is federal
8 legislation administered by Ministry of Transport.

9 So if the crossing is such that vessels
10 use it, there is a process we would go through to get
11 approval under the Navigable Waters Protection Act.

12 THE CHAIRMAN: When you are doing your
13 sizing, would you normally get involved in enlarging
14 the channel over its natural state in a case, for
15 instance, where in the past or your studies indicate
16 that that river may overflow its banks?

17 MR. ADAMSON: We may, yes, that is
18 correct. And there have -- I can think of the Root
19 River in Sioux Lookout District where we did just that.

20 It's a very narrow channel and actually
21 it's on the divergence from Lake St. Joseph to Lac
22 Seul, so that the waterflow that's imposed on that
23 channel is larger than that natural condition.

24 So we had to build -- we didn't build it
25 especially wide, but we built it especially high to

1 ensure the full flow can get through the opening.

2 MS. BLASTORAH: Q. In that case then,
3 Mr. Adamson, did you actually widen the natural opening
4 or was it just a matter of making the crossing higher?

5 A. We made it higher, yes.

6 Q. So there was no actual excavation of
7 the natural banks?

8 A. No, but in cases like that, that case
9 we more or less clear span right the full width of the
10 river.

11 Q. Is that a very common situation,
12 where you have to do that?

13 A. It occurs. Again, that case comes to
14 mind, but each site is specifically designed.

15 Q. And would it be very common that you
16 would actually have to excavate the banks, the natural
17 banks in order to better allow passage of the water?

18 A. No, it is more common to constrain in
19 a natural channel.

20 The last factor I would like to mention
21 that might influence the opening size is impacts on
22 values and concern.

23 A mitigation technique that might be
24 developed, for example, if it was a spawning area or a
25 fish migration route, it may be decided that the bridge

1 should go in that site rather than a culvert in order
2 to keep the natural subtrait to reduce flow velocities
3 in the water, that sort thing.

4 So all of these go together to come up
5 with a decision on each crossing as to what the opening
6 size should be.

7 Q. And just on one of those points, Mr.
8 Adamson, you indicated that one factor would be whether
9 the access requirement is for short-term or long-term
10 usage. How might that affect the decision?

11 A. If it was short-term access, I
12 believe what may go in is a log bridge type of
13 structure, something that's economical to build, cheap,
14 rather than a culvert which is more of a long term and
15 also may prove more costly than a log bridge.

16 Another concept that seems to be gaining
17 favour with our new bridge standards is the idea of a
18 portable bridge, one that is put in and then taken out
19 when its use is finished and it is going to be used
20 somewhere else again.

21 Q. And when you say it is taken out, is
22 that a bridge that is sort of dropped in or is it
23 something that's constructed and then taken apart
24 again?

25 A. It's constructed and then taken apart

1 again.

2 Q. Is it ever the case that you would
3 use long-term materials for construction of that sort
4 of a bridge, something you anticipate would be removed
5 again?

6 A. Certainly the materials that are
7 going to be reused, for example, if it was steel beams,
8 you would use steel beams and then they are usable for
9 many, many years, they don't deteriorate. The cribs
10 may be log cribs because they are going to stay there.

11 Q. And that's something that's done, I
12 take it, the removal of the steel beams as opposed to
13 the log cribs?

14 A. Yes, the cribs would normally be left
15 in place.

16 Q. And those steel beams could then be
17 reused?

18 A. Yes.

19 Q. Thank you.

20 MS. BLASTORAH: Mr. Chairman, I think
21 this might be a convenient place to stop for the day.

22 I don't anticipate any problem finishing
23 early on Wednesday, and I don't want to make any rash
24 promises but possibly even tomorrow.

25 We have some more slides to see from Mr.

1 Adamson, and I think rather than starting into the next
2 slide presentation it might be -- flow better if we
3 just began with that tomorrow.

4 THE CHAIRMAN: Okay. And are you
5 suggesting that a start tomorrow at nine would be in
6 order?

7 MS. BLASTORAH: I think so. I don't
8 think there is any reason to start earlier. If need
9 be, we could perhaps sit a half an hour or so longer,
10 but I don't anticipate any problem finishing in good
11 time on Wednesday at the latest.

12 And just before we leave, perhaps. I
13 made an error in marking or indicating the number of
14 one of the exhibits. I indicated that strategy No.
15 LM-90503 is Exhibit 685, it is actually part of Exhibit
16 685 which is the green binder titled: The
17 Guidelines -- Resource Access Roads Policy and
18 Implementation Strategies and Guidelines. Perhaps we
19 could just mark that 685A, that particular strategy
20 number LM-90503.

21 THE CHAIRMAN: Sorry, what was the last
22 number again, LM...

23 MS. BLASTORAH: 90503. The subject is
24 given as Issuance of Land Use Permits for Private
25 Forest roads. Thank you.

---EXHIBIT NO. 685: Strategy No. LM-90503 entitled:
Issuance of Land Use Permits for
Private Forest Roads.

THE CHAIRMAN: Very well. We will adjourn until tomorrow morning at nine o'clock.

MS. BLASTORAH: Thank you, Mr. Chairman.

---Whereupon the hearing adjourned at 5:10 p.m., to be reconvened on Tuesday, June 27th, 1989, commencing at 9:00 a.m.

